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NEXT

GENERATION

The future of interactive entertainment

February 1995

gaming
on the
**information
superhighway**

Whatever serious applications the
Infobahn delivers to the home,
games will inevitably thumb a ride...

volume **one**

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Established game companies Sega, Nintendo, 3DO and newcomers Catapult Entertainment and The Imagination Network are pioneering the next generation of interactive entertainment. Get ready to plug in, on page 52



This is **NEXT Generation**, issue 2

You're holding the hottest videogame magazine in the US. In many places, the Premiere issue of **NEXT Generation** sold out within days of its December 8th launch. The internet is humming with unprecedented praise. Gamers have been unanimous in their support of a magazine that finally dares to cut through the hype, stick to the *real* story, and tell the truth.

But to business.

Gaming on the information superhighway is the future of interactive entertainment. That's a fact. The only issues in question are *how*, *when* and *what* network dominates and claims its status as standard. Games will then ride in on the coattails of more serious applications as sure as the most functional elastic band is used as ammunition in the occasional office skirmish.

That games should take to cyberspace and leave the physical constraints of cartridges, floppy disks, and CDs behind is a natural evolution. Games beamed to the home on demand, thousand-player combat (imagine *Tie Fighter* with two teams of 500 ships piloted by the inhabitants of neighboring towns!), and a set-top box with the computing power: beyond anything currently on offer from Sega, Atari, 3DO, Nintendo or Sony.

It's still a long way off. But people are working on it. People with billions of dollars at stake — and that buys motivation. Six pioneering forms of network gaming are profiled, starting on page 52. Each is breaking new ground. Each is linking gamers together. Each is forging ahead in the race to create what has to be the ultimate prize: the videogame that unites the world (we're only half joking).

All this and more inside. Because when you're caught in the crossfire of the biggest platform wars of all time, you need reliable information.

Welcome to **NEXT Generation**.

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NEXT GENERATION

February 1995

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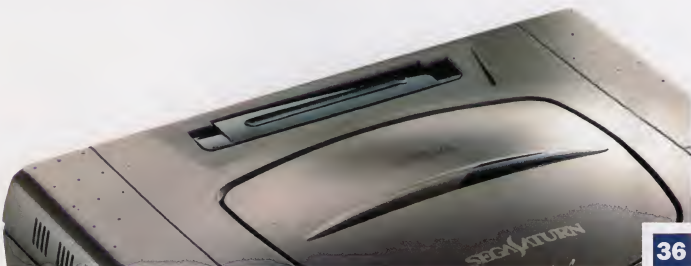
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Why are Shigeru Miyamoto's games so damn good?

Mario, Zelda, Donkey Kong, Star Fox, Pilot Wings, F-Zero... his resume reads like a list of videogaming's greatest hits. Now the world's greatest game designer talks candidly with **NEXT Generation** about game design, Ultra 64 and (most justly) his competitors...



Saturn: The real story behind the headlines...

As Saturn launches in Japan at the same time as Sony's PlayStation, Sega's future hangs in the balance. **NEXT Generation** takes a look under the hood of Sega's new 32bit system, and tells the story of Saturn's turbulent passage from initial design to hard plastic



Gaming on the information superhighway (aka Joyriding)

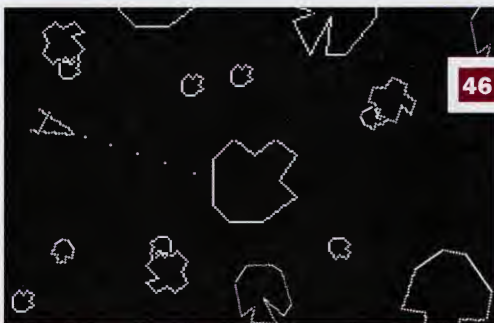
Games will always ride in on the coattails of more serious applications, and the information superhighway will prove itself to be no exception. **NEXT Generation** profiles six pioneers of networked gaming, each engaged in the business of linking people together



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Budding game designers take note as the genius behind the world's greatest games reveals his secrets

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Set for a US launch later in '95, Japanese gamers are already enjoying Sega's 'next level.' Read all about it

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"They don't make 'em like they used to" argue the cynics. But now games designers are starting to agree

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Gaming on the information superhighway (aka Joyriding)

This is the future of interactive entertainment. Networks are already linking gamers across the globe, so when are you getting hooked up?

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60 games reviewed and rated. This month featuring: *Armored Fist* (PC), *Checked Flog* (Jaguar), *Club Drive* (Jaguar), *Cops* (arcade), *Cosmic Carnage* (32X), *Dragon Jaguar*, *Eternal Champions* CD (Sega CD), *Guardian War* (3DO), *Iron Soldier* (Jaguar), *Magic Carpet* (PC), *Need for Speed* (3DO), *NFL '95* (Genesis), *Super Afterburner* (32X), *Super Space Harrier* (32X), *True Golf Classics* (3DO) and *Under a Killing Moon* (PC)

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Next Month...

NEXT Generation #3 hits the newsstands on February 21st. Get a sneak preview of what's inside



NEW

NO
RULES



Anything goes with the Goldstar 3DO™ System. Full-screen, full color video. Mind bending speed. Supersonic sound. 3-D graphics and 360° action. It's all part of the baddest new game box on the block.

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GoldStar

Play The Future Today

He's simply the world's finest game designer. *Mario, Zelda, Pilot Wings, Star Fox, Donkey Kong...* his resume reads like the videogame industry's greatest hits. So what makes him tick? What are his secrets? Basically, **NEXT Generation** wants to know...



Why are **Shigeru Miyamoto's**
games
so damn
good?



Genius is a word that should be kept behind glass, reserved exclusively for the truly exceptional. But no one who's ever been entranced by one of Shigeru Miyamoto's games can question his brilliance. Constantly imitated, but never equalled, he is without question the most inspirational game designer in the world.

Creating one classic game is hard enough. But whereas Alexey Pajitnov has never come close to equalling *Tetris*, and Will Wright's original *Sim City* remains a cut above all subsequent attempts to rebake its recipe, Miyamoto's hits just keep on coming: From 1981's *Donkey Kong* to 1995's *Donkey Kong Country*, Miyamoto has provided Nintendo with a continuous flow of world-beating games.

So just how does he do it? What is his inspiration? **NEXT Generation** caught up with Mr. Miyamoto at Nintendo's HQ in Kyoto, Japan...

.....

Your own games

NG: Mario is the single most successful videogame character of all time, what's the story behind his creation?

Mr. Miyamoto: Mario himself was brought about by a combination of accident and design. We had very poor graphics on those first arcade machines, and we had to compromise in order to make him look good. He wears dungarees because that way you can see his arms move. He wears a hat because his hair would look silly if it remained static — also, I cannot come up with hairstyles very well! His moustache is there because there weren't enough pixels to separate his mouth from his nose. The game itself was just an idea: running, climbing and jumping.

NG: *Super Mario Bros.* is your best-selling game. Can you tell us a little about the process that went into its design?

Mr. Miyamoto: The game is split into two halves. One half is the game itself, with the platforms and characters and all the things you can actually see. The other half is secrets. First, we mapped out each level completely. We first drew the levels on graph paper, then implemented them on the development hardware. Then we simply played the game and tweaked the levels until we were happy with them.

A lot of playing has to be done before a game is perfect. Then we go through each level and add the secret, hidden things. The secret of the *Super Mario* games is that we play and play and play and play!

NG: The *Legend of Zelda*, your other success, also features lots of secret rooms and hidden objects. What inspired these ideas?

Mr. Miyamoto: When I was a small boy, my friends and I would go hiking in the mountains which surrounded my home town — exploring is fun when you can't get lost. Also, I like to explore on my own. When I visit a new town like New York, I like to walk alone at night, simply exploring the back streets and hidden places. I think my colleagues think I'm crazy when I do this. I explore on foot for a while then sometimes I buy a bicycle and cycle around town. Only when I know my way around a little will I buy a map. *Zelda* games are like this. You explore, then you gain a useful tool — like my bicycle — then you get a map. The map isn't essential; it just makes things a lot easier.

NG: Of all the games you've designed yourself, which has become your favorite?

Mr. Miyamoto: Oh, that's a difficult question. It's hard for me to answer. I like *Donkey Kong* because it was my first game, but it's also very enjoyable. I also like *Excitebike* (an early NES racing game) very much. I still play it sometimes. *Pilotwings* is also one of my favorites.



Mr. Miyamoto's very first character, Donkey Kong (left) is once again at the head of the Nintendo's lineup

NG: Nintendo must be very pleased with your game *Donkey Kong Country*. What was your involvement?

Mr. Miyamoto: Talking specifically about the character designs in *Donkey Kong Country*, we made hand-drawn pictures of Donkey Kong, and Rare Limited in the UK — which has actually made such splendid CG (computer graphic) characters — returned the resulted computer graphics. We repeated this

process for the rest of the game. Though it was very hard to reproduce the hand-written picture of Donkey Kong in terms of the CG process, I like the high quality of the CG results. I will be more involved in game character design for the next game we undertake with Rare.

On character design

NG: Do you think there are any 'rules' peculiar to designing video game characters?

Mr. Miyamoto: I do not think that there are such rules in designing videogame characters. However, there are some restrictions in which we are making them. For example, the number of 'dots' and the whole

memory capacity we can use are predetermined, which affect the game character designing. The game character designers have to make the best graphics in such a limited circumstance by utilizing their own know-hows.

NG: Where do you find inspiration for game characters?

Mr. Miyamoto: As I myself am a character designer, I often find the one while I am drawing something. As I am putting much emphasis on the playability, I usually make characters which are suitable for certain game scenario and action.

Mario himself was brought about by a combination of accident and design. He wears dungarees because that way you can see his arms move...



As the popularity of Nintendo's videogames grew, the Mario universe began to expand into comics, television and even film



The rendered graphics in Nintendo's *Donkey Kong Country* bring new life to the simple, two-frame predecessor



While not an RPG in the purest sense, *The Legend of Zelda* was responsible for bringing the roleplaying/adventure genre to the US

NG: So a character's look is influenced by what he or she does?

Mr. Miyamoto: Greatly. Playability is very important in a videogame, and how the character looks gives significant impact to it. When we are making, say, 10 enemy characters for one game, the designs of five characters are determined by the characteristics of the character (for example, in *Super Mario Bros.* we wanted some character which Mario could step on and turn upside down, so we made a turtle-looking character), and the remaining five are determined by what kind of graphics we want in a certain part of gameplay. Here the process is reversed as the character's function is based upon the predetermined graphic, it's look.

We are always trying to make a game in which the player could determine, without consulting with the instruction manual or guidebook, what he/she should do with the enemy or some obstacles (for example, one can easily tell that an enemy with thorns should not be hit).

NG: Which of your characters are you most proud of? And if your answer is Mario, who would you chose next?

Mr. Miyamoto: Donkey Kong was the first character I designed, and he is a concrete picture of a game character — not an abstract alternative for the player's own character, as found in all the other arcade videogames that existed at the time. *Donkey Kong* was also the first game that embodied the story behind the game play — although putting forward the game story is a matter of course nowadays.

I do not know if it is pride that I feel toward the character Donkey Kong, but I cherish Donkey Kong as much as I do Mario. I like the Donkey Kong character in *Donkey Kong Country* even more, as he looks more adult.

On game design

NG: What emotions should game players feel about the character they are controlling?

Mr. Miyamoto: I think that the game player is free to have whatever feeling he/she wants to have. There is always "I" who is becoming the game character and also another "I" who is looking at the former "I." I think the videogame is interesting because the distance between these two "I"s are varying (sometimes nearby, sometimes far away) during the play.

Games are a trigger for adults to again become primitive, primal, as a way of thinking and remembering. An adult is a child who has more ethics and morals, that's all. When I am a child, creating, I am not creating a game. I am in the game. The game is not for children, it is for me. It is for the adult who still has a character of a child.

NG: You have always maintained that the way a game plays is more important than how a game actually looks, but how can improved graphics help make a game better?

Mr. Miyamoto: A videogame is an audio-visual work. Better graphics are welcome, provided, however, that they don't disturb or (that they) improve the playability. And, when I say "better graphics," I mean that more realistic graphics are not only the element.

NG: Your games, typically, are very large and offer players a great value for the money. How important is a game's size — in terms of how much there is to explore and how long it takes a player to fully complete it?

Mr. Miyamoto: We know that videogames are not cheap for our children, and we are sincerely making every possible effort to make it worth the money. We hope that game players will appreciate the depth of the game rather than the memory capacity. Our games are designed so that players will not get tired of them even when (they are) playing the same field repeatedly, and that player's

Career Highlights

Shigeru Miyamoto's talents have been employed on a huge range of games. Whether as producer, director, or designer, he has influenced the production of most of Nintendo's greatest releases. Here are some highlights...



Donkey Kong (arcade) — 1981



Super Mario Bros. 1 (NES) — October 1985



Legend of Zelda (NES) — July 1987



F-Zero (SNES) — August 1991



Pilot Wings (SNES) — August 1991



Super Mario Kart (SNES) — September 1992

Mr. Miyamoto, next to a huge line of Mario products, shows off one of his favorite characters



skill will be improved as (they) play more. **NG:** When playing one of your games, there's always a great feeling of 'exploration.' Presumably this is something you deliberately nurture?

Mr. Miyamoto: Imagine the spirit — the state of mind — of a kid when he enters a cave alone.... This must be realized in the game. Going in, he must feel the cold air around him. He must discover a branch off to one side and decide whether to explore or not. Sometimes he loses his way. If you go to the cave now, as an adult, it might be a silly, trivial, small cave. But as a child, in spite of being banned to go, you simply could not resist the temptation. It was not a small moment then.

NG: You place great importance on secrets in your games...

Mr. Miyamoto: We are designing games so that the player will try many things apart from the main course, and hidden secrets are often the one which could induce the players to explore. The players must be thinking 'Well, I don't see anything here, but it can be, it's possible,' then, the player is curious enough to visit that place. When he finds something he never expected he feels, 'Ah, I did it. I made it.' It's a great kind of satisfaction.

Games are a trigger for adults to again become primitive, primal, as a way of thinking and remembering. An adult is a child who has more ethics and morals, that's all.

NG: This is one way in which games are rewarding. How else do you make sure that players are encouraged to keep playing and want to carry on their adventure?

Mr. Miyamoto: There are many things that people want to challenge in real life but cannot because there are always dangers associated with such adventures. One of the important charms of videogames is that they give the thrill of an interactive adventure and the excitement of existing in a fantasy world without risking your life. Nobody would ride on roller coasters at amusement parks if there was periodic malfunctioning reported.

It is people's nature that they want to feel they are making improvements in their gameplay. The more skillful they become with their fingers, the more clever they become. We are designing the game so that people feel like improving their skills by trying again and again. The game balance is a very important factor. Players are required to think about how to meet the challenge presented by the game designers, first with an easy one and gradually with the increasing difficulties — solving the ultimate puzzle requires the piling up of processes and problem-solving from the previous difficulties.

NG: How do you manipulate these motives to 'hook' a player and encourage him or her to keep on playing until the game is completed? In other words, what is your game's magic ingredient?

Mr. Miyamoto: I believe that the most important factor is to make players feel 'comfortable.' It is very minute and delicate game fine-tuning which gives players the comfort to manipulate their



Mario's brother, Luigi, has typically played a back seat to his star sibling, while still retaining a significant spot in the Mario universe



Super Mario Bros 2 (NES) — September 1988



Legend of Zelda 2 (NES) — 1987



Super Mario Bros 3 (NES) — February 1990



Super Mario World (SNES) — August 1992



Star Fox (SNES) — March 1993



Stunt Race FX (SNES) — July 1994



Donkey Kong Country (SNES) — Nov 1994



Super Metroid (SNES) — April 1994

talking



Mr. Miyamoto feels that while competitors have imitated superficial aspects of his games, they are still missing the boat

character just as he/she wishes through the hand-held controller. The comfort could be achieved by perfect integration of graphics, sound and playability with perfectly synchronized timing.

On other peoples' games...

NG: Your characters are often imitated, but very rarely equalled. What common mistakes do you think are made by your competitors?

Mr. Miyamoto: I do not know if I can say that my game characters are often imitated, but I could agree that our game contents are often imitated. Unfortunately, our competitors seem to simply try to imitate the surface and just end up making very badly balanced games. They never understand why and how we have done what we have done to achieve each game's content.

NG: So what do you think of *Sonic the Hedgehog*?

Mr. Miyamoto: I think Sega made *Sonic the Hedgehog* so that it would have a character people would identify with Sega, like Nintendo's *Mario*. I think a platform game is the best way to incorporate a new character, so I don't think it copied *Super Mario* too much in that respect.

I think *Sonic* has more to do with corporate identity than anything else. I also think *Sonic the Hedgehog* is a very good game...very beautiful. It is similar to *Mario* in some ways, but also very different. We welcome the introduction of a

quality game like *Sonic* to the videogame market.

Of course, *Mario* is superior to *Sonic* in terms of the creative elements included in (and the time and energy spent in finalizing) the game. I am sorry I have not played *Sonic & Knuckles* so I could not comment on (Sega's) latest game.

NG: Do you have a favorite game that a rival game designer or company has designed?

Mr. Miyamoto: Hmm. I like the very old Namco games. I especially like *Pac-Man*. It was original and fun. I very much respect Namco's game ideas. I was disappointed when it released *Pac-Land* because that game relied on jumping and was too much like other jumping games. I think *Pac-Man*'s greatness lies in its originality, but I certainly like other games, as well.

NG: Shiny Entertainment's *Earthworm Jim* is currently making waves in the US. What do you think of the game character?

Mr. Miyamoto: Unfortunately, I have not had the chance of playing it a lot. But I liked the specific expression of him firing the gun. That particular expression is the one that I was thinking about incorporating in my own game; such expressions of a gun shooting — without actually displaying the flying bullets — could be exhilarating to the player.

Your personal tastes

NG: What do you feel about violence in videogames?

Mr. Miyamoto: As you know, the games Nintendo is making are not categorized as 'violent games'. Though I should not deny depictions of

violence in terms of the freedom of expression, I personally do not want to resort to depictions of excessive violence just because they are one of the easiest ways to make players excited.

NG: Most of your games have a unique 'feel'. Is this your own personality stamp or simply a Japanese style of design?

Mr. Miyamoto: I believe that we are not making Japanese games, but are making Kyoto games, if you follow me. The taste of a Kyoto game is different from that of Tokyo game — though both are Japanese cities. We Kyotoites hate to follow the fashion but rather love to set the fashion. The thing we always keep in our mind is that we should always make better games than ever so that the players around the world would praise us. One of the most difficult problems is that we have to make games in terms of the game players who have played our games before, and also in terms of the new game players. The game must be the one which gives further excitement to the experienced game players who have played our previous games, and also one lets the new game players play it very comfortably.

NG: Do you think your games are humorous? If so, in what ways?

Mr. Miyamoto: I do not know if our games are humorous. If you think so, it should be because of

Unfortunately, our competitors seem to simply try to imitate the surface and just end up making very badly balanced games.



With the added power of Nintendo's Super FX chip, Mr. Miyamoto has created a new style of shooter, *Starfox*, complete with trademarkable characters



Super Mario Kart is yet another example of Mr. Miyamoto's ability to turn simple ideas into timeless gaming

the nature of us Kansaites, Kansai is the area covering Osaka, Kyoto, and several other cities. The Kansaites make much of wits, explicit jokes, and are proud of making people laugh. The Kansaites feel like cracking a joke or two even during a very serious talk.

NG: What age do you think your games are primarily aimed at?

Mr. Miyamoto: We are not aiming for any specific age group, but we set the level of difficulties very carefully. In the case of action games, if we set the level of difficulties at age seven or eight, the level is suitable also for papas and mamas in their 40's and 50's who could not experience TV games in their childhood. In this way, the game will have an appeal to a very large age group. On the other hand, if we set the difficulty level at around age 18, it would not allow other large segments to play the game — and there are significant numbers of gamers around age 18.

NG: Personally, how do you feel that your games have improved over the years? Are there any lessons you have learned?

Mr. Miyamoto: Over the years, the production of videogames has required more designers and programmers as Nintendo's videogame markets have expanded. As we are fortunately able to secure more and more young, talented creators, the contents of the videogames have improved. Also, games which were unthinkable before are now possible thanks to the recognition by game players. One important lesson we have learned is that it is very important (although very difficult) to create circumstances in which each talented creator could bring his or her talent into full play in a harmonized manner.

NG: Do you prefer working on your own, making original games from scratch (such as *Super Mario World*) or do you prefer adding the final touches to semi-completed projects (such as *Star Fox*, or *Donkey Kong Country*)?

Mr. Miyamoto: If you ask me which is easier, I should answer that the semi-completed projects are easier, as I could just put whatever new exciting ideas I could think of into the game

without feeling a birth pang. It is always fun to improve the game by supplementing our skills on half-completed projects (provided that the project is a good one). Making wonderful interactive entertainment from scratch always requires hardship, time, energy, and a lot of other resources. However, the skill will never be improved if you are not experiencing the birth pang.

The future...

NG: You say that one of your favorite games is *Pilot Wings*. Will we ever see *Pilotwings 2*? Maybe on Ultra 64?

Mr. Miyamoto: Ha, sorry, no comment. Let me just say that I would like to do *Pilotwings 2* myself. I can't say more than that.

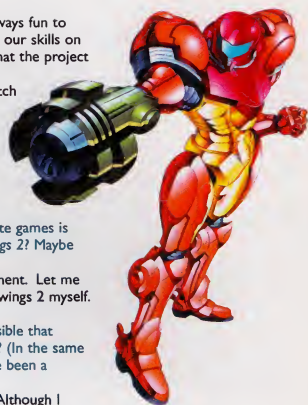
NG: Will Ultra 64 make games possible that couldn't have been done on a SNES? (In the same way that *Pilot Wings* could never have been a successful NES game.)

Mr. Miyamoto: Absolutely, it will. Although I don't care too much about a game's graphics — I don't think that graphics are nearly as important as gameplay, and great graphics won't change the way I design games, graphics just make great games look better — the overwhelmingly improved power of Ultra 64, which could write graphics and which could handle mathematical calculations very rapidly, is just stunning. I am not only talking about graphics quality. What this ultimate videogame machine will be able to do is unprecedented and beyond expectations for gamers who could only observe the transition from NES to SNES.

NG: So are you currently developing for Ultra 64?

Mr. Miyamoto: Another difficult question. Yes, I'm only working on the home-system games. The arcade games will be done by a separate team. I like the fact that there's a lot of power — more than enough power to do anything I can think of... which is good news for gamers everywhere. **NEXT Generation** makes no secret of its admiration for what Mr. Miyamoto has achieved in the last 15 years. We also believe that as the freedom of CD storage attracts more elaborate looking titles, the increasing number of new companies seeking to cash in on the gaming boom should realize that with freedom comes responsibility to the game. And if they need pointing in the direction of some classic gameplay for inspiration, then Mr. Miyamoto's back catalog is a fine place to start.

ng



A far cry from *Princess Zelda*, Nintendo's superheroin *Samus*, of *Super Metroid* fame, gave female gamers and action fans a new kind of hero

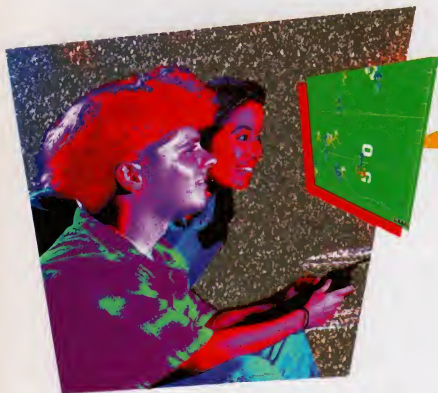


Initial designs of *Mario Bros.* included all of the levels drawn out on graph paper, including many of the game's infamous secrets

STOP PRESS

As **NEXT Generation** #2 goes to press, Nintendo has announced that Mr. Miyamoto is working with Dallas-based Paradigm Simulation to create 3D titles for Ultra 64. "Paradigm is a recognized worldwide leader in 3D virtual reality software," explains Nintendo's chairman Howard Lincoln. "And consequently will be able to develop a game to maximize the capabilities of the Nintendo Ultra 64 system. Paradigm's outstanding creative talent will work well with Mr. Miyamoto's team." One to definitely look forward to...

Stop Playing



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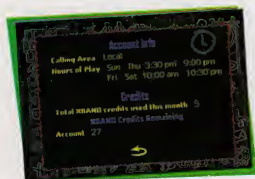


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Sick of having your **slob friends** over to play?

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With Yourself.



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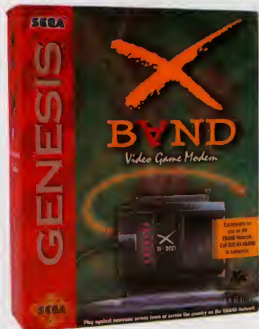
codescan: Alpha 7

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news

The hottest global **news** that affects the games you play

Apple's game machine reaches fruition

But as 'Pippin' targets the 'family' market, core gamers may find themselves left out in the cold

Following the hiring of enthusiastic "games evangelists," a dedicated game machine from Apple has been rumored for a long time. Now — after much speculation — the Cupertino, CA company has announced 'Pippin,' a games/edutainment/multimedia system set for release in late 1995. Based on a 4x speed CD-ROM drive and a PowerPC 603 microprocessor (similar to 3DO's M2 accelerator, also due for release later this year), Pippin is essentially a stripped-down Apple computer, aimed at being affordable and uncomplicated enough for the mass market.

"Much more than a game player for much less than a PC," is the marketing angle. With a target price of "around \$500" and an easy-to-use, joystick-accessed interface, Apple is very confident that Pippin will provide an easy entry point for many households into the world of multimedia.

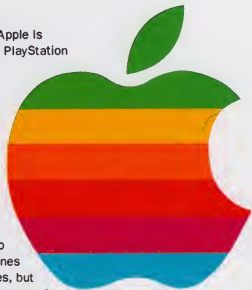
And, of course, games. Apple is wary of direct comparisons to PlayStation or Saturn, although all three machines are expected to launch within months of each other later in the year. "We have a lot of admiration for Sega and Nintendo," concedes an Apple spokesman, "and we don't — by any stretch of the imagination — expect them to go away."

"We expect people to go out and buy their game machines if they only want to play games, but if they want educational programs and something that can grow as a platform, then they should choose Pippin."

A keyboard, mouse, and even floppy and hard disk drives are planned for development, enabling Pippin owners to grow with their investment and "upgrade in the future to perform functions that don't exist today." So it would seem that Pippin

will be treading on the toes of CD-i and 3DO in preference to fighting it out toe-to-toe with the Japanese console giants.

But both 3DO and Philips concede that they underestimated the importance of game playing in their systems' portfolio of functions — both are now making up for ground lost early on with high-intensity game development. It would seem that multimedia and edutainment ambitions are fine and commendable, but they don't actually sell



Myst (above) and Maxie's Sim Tower (upper right) are two games that debuted on the Mac in preference to the PC

PIPPIN TECH SPECS

CPU

- 66MHz PowerPC 603 RISC Microprocessor

Memory

- 6MB combined System and Video memory
- Additional 1,2,4 and 8MB memory expansion cards available
- 4MB ROM
- SRAM Store/Restore backup

CD-ROM

- 4x speed

Video

- 8bit and 16bit video support
- NTSC & PAL composite, S-Video and VGA (640x480) support
- Up to 16.7million colors

Audio

- Dual stereo 16bit CD Quality output
- Dual 16bit stereo digitized input

Telephony

- GeoPort™ ready

Controllers

- Supports up to four simultaneous players over ADB (Apple Desktop Bus)
- Mouse and keyboard peripherals will become available

CD-formats supported

- Audio CD
- CD+
- MPEG "White Book" video (requires additional MPEG hardware decoder)

Price

- Approximately \$500

Release

- Fall 1995



Motorola's PowerPC 603 chip is the heart of Pippin

very many pieces of hardware. Kids are allergic to anything badged 'educational'; it is not the killer app needed to get cash registers ringing.

So if Apple is to hit mass market with Pippin, **NEXT Generation** believes it needs (having already lost the 'serious' user's attention the day it decided to axe the keyboard and mouse) to come up with the gaming goods. A hot version of *Doom* can sell machines today and the 'multimedia' can come tomorrow...

So how does Pippin actually stack up as a games machine?

"The PowerPC 603 chip is very powerful," explains Colin Boswell, Technical Manager of Domark (developers of *Flying Nightmares*, the first native PowerPC game), "but the chip in Pippin doesn't have auxiliary hardware to support it — everything has to be done by the PowerPC chip itself in software. So from a hardware point of view, it probably doesn't even match a 3DO."

There are, however, advantages to this uncomplicated architecture, explains Boswell. "PowerPC (and hence Pippin) is compatible with Macintosh hardware, so it shouldn't take more than a day's work to get any Macintosh game running on a Pippin." And it is this simple conversion of Macintosh titles to Pippin titles that Apple is relying on to ensure that Pippin's launch is accompanied by a good, strong range of software.

The Macintosh games scene has traditionally lagged behind the PC, with only a few notable exceptions — such as (the ludicrously overhyped) *Myst* and Maxis' range of *Sim* titles — debuting on the Mac. The majority of Mac games to date have been a string of straightforward conversions from competitive platforms (such as LucasArts' *Rebel Assault*) and a smattering of desktop draws (*Asteroids* clones and puzzle games). But there is increasing interest in the development community for PowerPC, and momentum is growing. But whether it will be

enough to help Pippin establish itself against 3DO and CD-i, or as a games machine in the face of Sega's and Sony's multimillion dollar launch efforts, remains to be seen.



Apple is aiming Pippin directly at the market targeted by both CD-i and 3DO. Apple's brand name is an obvious advantage, but with little experience in bringing to market anything under \$500, it could find it tough to catch up

"We have a lot of admiration for Sega and Nintendo and we don't, by any stretch of the imagination, expect them to go away. But if (consumers) want something that can grow as a platform, they should choose Pippin."

breaking

PlayStation enters the home straight

NEXT Generation attends Sony's Tokyo prelaunch press show for a final PlayStation briefing

Even though interest in the PlayStation had already reached fever pitch in Japan, Sony took no chances on the launch of its PlayStation slipping by unnoticed. Days before the machine's debut, the company held a huge press conference in Tokyo to publicize its ambitious plans to enter the videogame market.

Held at the most luxurious hotel in the city, the New Otani, just a stone's throw from the Imperial Palace, the event was deliberately aimed at the mainstream media rather than videogame journalists. Sony's position as one of Japan's biggest and

most influential corporations ensured that several television channels turned up and the majority of Japan's national newspapers sent representatives to witness its biggest and most ambitious product launch since the illustrious Walkman.

The highlight of the event was the long-awaited announcement of the PlayStation's retail price and Sony's supporting strategy for the machine during the coming months. The PlayStation's project manager, Teruhisa Tokunaka, revealed that the basic machine will sell in Japan for ¥39,800 (\$410). This means that gamers will be able to get hold of a PlayStation plus a couple of games for less than the psychologically important ¥50,000 (\$500) figure (although the widespread high-street discounting that normally takes place looks unlikely right now, given the number of hardware bookings that shops are already taking).

Also divulged during the 40-minute conference was the PlayStation's final release date. After months of playing cat and mouse with Sega, Sony announced it

would release the PlayStation in Japan on December 3 (10 days later than the Saturn), after having been shunted back four days to give distributors a fighting chance of getting the machine out in appreciable numbers. Supply was limited to 4,000 Japanese outlets, which hoped to have stocks of



Over 1,000 delegates attended the New Otani Hotel, Tokyo for the main event — Sony Computer Entertainment's huge press conference for the PlayStation launch



100,000 machines between them before the beginning of December and 300,000 before the year's end. Distribution is being handled by a company with the wonderfully 'Japanesey' name of Happynet. During his speech, Mr. Tokunaka stated that Sony could not rely on its normal distribution channels in Japan because it needed to get the machine into game shops. The company is aiming for sales of one million units in the following six months, with a further two million expected to be sold by the end of 1995.

The event was deliberately aimed at the mainstream media rather than videogame journalists



Teruhisa Tokunaka, vice president of Sony Computer Entertainment, shows the PlayStation's trademark black CD to delegates



SCE's Shun Fujishima, general manager of the international business division, talked at length to the press



Small objects of desire: both the PlayStation's memory cards (above) and a mouse (top) will be available

Who is it?

This man started writing software over ten years ago. His first game, a business simulator, was released in 1983 but sold only two copies. He's since gone on to form his own company and recently released a game based on an original childhood idea

As is usually the case with major Japanese launches, game shops are enforcing a strict limit of one machine per buyer (to be booked personally in advance, of course) and are also vigorously discouraging any form of export market. The few machines that might slip though the (presumably, not so happy) net will probably end up in Hong Kong. Given the high demand, it looks like the lucky importers who obtain them will be able to set whatever price they choose. Anyone expecting change from \$1,500 — especially after a couple of games are thrown in — are most likely being a little too optimistic.

In a bid to disassociate itself from the mistakes made by other hardware manufacturers, Sony was at pains to stress that eight games will be available at launch, with at least another 15 to have appeared before the end of December. Pressed on stylish matt-black CDs, they will all retail at exceptionally consumer-friendly rates — between ¥5,000 (\$50) and ¥7,000 (\$70). And it seems that it won't be just the dregs that makes it under the ¥6,000 (\$60) threshold, either. Sony's *Motor Toon Grand Prix* (an almost complete version was shown at the event and proved to be very popular) will be a mere ¥5,400 (\$55). A price hopefully indicative of US prices come the machine's launch here.



The man Sony put in charge (above), SCE's Teruhisa Tokunaka MC'd the press conference which finally confirmed the PlayStation's arrival

To ensure that the momentum of its software release schedule is maintained, Sony has now signed up over 250 third party developers. Mr. Tokunaka revealed that 700 development systems have shipped to companies around the world. Many of these, particularly the US and UK firms, still have a full year before their first releases next fall (which is when the US machine is expected to launch).

More immediate results are demanded from Japanese developers, though. Typical of the work in progress is *Tekken* (see page 82), a new coin-op based on the System 11 board developed via a joint venture between Sony



One of the results of Namco's increasingly close links with Sony is the *Negcon* (above). *Ridge Racer* and *Cyberseid* should both benefit

breaking

it is...

The founder of Bullfrog Productions, Peter Molyneux, Bullfrog's latest game, *Theme Park*, is based on Peter's original business simulator idea. Peter's other big hits include *Populous*, *Powermonger* and *Syndicate*. The world awaits *Magic Carpet* with baited breath...

Computer Entertainment and Namco. Exact details of the system have not yet been released, but the hardware is certain to be almost identical to the standard PlayStation.

System 11 is pitched as a direct competitor to Sega's Titan arcade board, which is itself a souped-up version of a home console — the Saturn. The current fad, particularly in Japan and the US, of constructing mini-amusement parks has created the need for a steady turnover of new boards which are cheap and quick to construct in order to keep the consumers coming. System 11 and Titan are both designed for exactly this type of money-making, so in the near future it may become commonplace to see many PlayStation and Saturn games debut in the arcades previous to migrating downward (with negligible loss of quality) to their home equivalents.

Namco showed off a new, dedicated PlayStation controller at the conference, developed under an exclusive deal with Sony. The 'Negan' (from the Japanese word *nejiru*, which means to twist) takes design functionality to an extreme — it twists in the center to allow players exemplary control of driving games without the need for expensive (and wobbly) steering wheels. With *Ridge Racer* on sale soon after the PlayStation launch and *CyberSled* following in January (the pad's suitability for the two-player tank game was particularly stressed), Namco seems to have the pre-Christmas peripheral market sewn up. The pad will retail for ¥5,000 (converting to about \$51).

However, some people voiced doubts about the standard PlayStation joystick. Although the 14-button design has been generally well received in Japan, a number of international delegates were worried about its small size. Sony has made it clear that the machine is aimed

at 12 to 22-year-olds in its domestic market, but the generally larger hands of prospective PlayStation owners in the West may require a rethink on Sony's part for the machine's US debut.

Several of the many other accessories demonstrated include the PlayStation memory card, which will be used for saving games. The 128K device, which costs just ¥2,000 (\$21), slots easily into the machine just above the joystick connection and can access a decent 10K of saved information at a second — useful for high scores.

Also on display were several samples of the boxes in which the machine will be packed. Continuing the industry's trend toward more identifiable packaging, the PlayStation cardboard



Sony has designed the system's retail box to convey an air of stylish understatement. Not bad for a cardboard box



One of SCE's main attractions was their own cutesy racer, *Motor Toon Grand Prix*. Sony enticed Japanese celebrities to play for the cameras

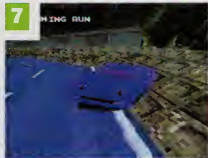
features sepia-toned photographs, which seemed to be widely appreciated.

Following the presentation, journalists were let loose upon the assembled software for a few hours. Although most of the PlayStations weren't connected to televisions, Sony dispensed with security for one of the main attractions, *Ridge Racer*. Guests flocked to play the game that, more than any other, has given credibility to Sony's venture into the videogame market, and it elicited a fair few gasps. Although by no means arcade perfect (the frame rate is 30fps and the detail far lower), Namco's conversion is very slick indeed and a credit to both the power of the hardware and the dedication of Namco's development team. Namco's Yuchi Haraguchi was also sighted at the conference and was sitting on a board which represented third party licensees.

On a day when excited shouting was the norm, Sony was keeping noticeably quiet about news of



A near-final *Motor Toon Grand Prix* proved to be one of the event's most popular games. Polygons have never looked this cute before



'Video PlayStation' (top left) was distributed at the conference and provided a typical Japanese preview of the PlayStation's graphic abilities and forthcoming releases. 1 The cartoon logo introduces the action. 2 The video's presenter (Japanese TV stars) meet each other. 3 The PlayStation sprite test shifts thousands of fully light-sourced balls. 4 Texture mapping is applied to rapidly and independently rotating cubes. 5 Gouraud-shaded dancing fighters — note the transparent floor. 6 The dinosaur that started it all — this is one of the PlayStation's most amazing demos. 7 Ridge Racer looks every bit a killer app. 8 Metal Jacket was one of the many games that looked unfinished. 9 Toshinden's smooth animation and scaling are exceptional

manufacturing problems with the first run of PlayStation hardware. Rumors circulating among delegates focused on post-production checks that uncovered a number of flaws on the motherboard. Fortunately, a \$30 billion multinational like Sony can afford to just trash them and start again.

Sony's new kit has already spawned a thriving ancillary industry, with a gaggle of new magazines ready to cash in on PlayStation hysteria. Players will have a choice of no less than six titles, four of which (Denpa PlayStation, PlayStation Magazine,

PlayStation Tsushin and Hyper PlayStation) are published biweekly, while the remaining pair (The PlayStation and PlayStation Magazine Monthly) will appear every month.

With this level of coverage assured even before the machine is released, no wonder the PlayStation proved so hard to ignore when it hit the streets. Although a few PlayStation's are still available in Japan at the time of going to press, Saturn has completely sold out. Whether this can be attributed to clever thinking on Sega's part by launching two weeks earlier or simply the greater number of PlayStations manufactured, is an argument best left to corporate press releases. But one thing is guaranteed, and that is that PlayStation and Saturn are coming to the US. And you ain't seen nothin' yet...

ng



Alongside Ridge Racer, Namco's Tekken proved to be a hit with the show delegates. The coin-op uses the System 11 PlayStation board



Tekken (above) will be converted to the PlayStation for a March release. The game shifts a load of textured polygons in realtime

breaking

Reality Lab: fast 3D for games developers

NEXT Generation reports on a PC tool that makes 3D graphics creation easier and speedier

British-based company RenderMorphics has developed an Application Programming Interface (API) that could dramatically reduce development times for games.

Reality Lab is a Windows-based authoring system that, like Criterion's Renderware and Argonaut's BRender, provides programmers with all the tools they need to create sophisticated 3D graphics without the need for intensive technical programming or extra hardware.

Reality Lab is packed with realtime 3D effects, including Gouraud and Phong shading, specular highlighting, face-by-face texture mapping, true-color (RGB) mode, transparency, picking and z-buffering. Although these are all available in software without hardware acceleration, the program also supports 3DLabs' GLINT chip (see **NEXT Generation 1**), providing the potential for even greater 3D performance.

Says Servan Keondjian, RenderMorphics' co-founder and R&D director: "Reality Lab gives developers the time to work on the gameplay and the artwork — the look and feel of the game. That's what they want to do."

The history of Reality Lab can be traced back to 1989, when Keondjian was studying astrophysics at



This demo game is constructed from Gouraud-shaded polygons and runs at 640x480. All the objects are lit using realtime RGB effects

Imperial College, London. During stints on the road as pianist for a rock band, he spent all his spare time sitting in the back of the minibus working on the 3D groundwork for what is now Reality Lab.

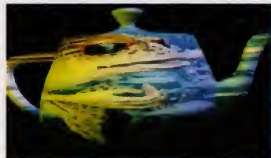
"I was always more interested in 3D than quantum mechanics," he laughs. "I had this great technology. We always knew we could make 3D go fast and then we just built it into the system."

Reality Lab's main advantage is speed. One user told **NEXT Generation** that "Reality Lab produces 3D graphics on a Pentium/90 that are at least twice as fast as on the PlayStation."



"It gives game companies the time to work on the gameplay and the artwork — the look and feel of the game"

Servan Keondjian, R&D director



The benchmark 'Utah Teapot' (inset) is texture mapped with a fish motif. Purple, blue and orange spots light this ship in realtime (above)

The program also increases the ease of cross-compiling (running code from one machine on another).

Another of Reality Lab's strengths is its hierarchical command structure. At any given level there is a 'parent' object which can be linked to any number of 'children.' Apply a movement to the parent and the system deals with its children, saving you time-consuming



Reality Lab's impressive realtime rendering power is shown by this revolving chrome-textured head



Reality Lab supports pixel-accurate picking - the red spotlight in the ribcage can be selected even though it's behind the skeleton's plane

Reality Lab benchmarks

Mode	486/66 VLB	Pentium/ 60 PCI
(polygons per second)		
Flat-shaded	60,000	100,000
Gouraud-shaded	56,000	92,000
Phong-shaded	30,000	50,000
Flat-shaded texture	45,000	80,000
Gouraud-shaded texture	39,000	70,000
Phong-shaded texture	20,000	36,000
Lighting and transformation only	135,000	220,000

All benchmarks taken using 400x400 viewport, 3,700-polygon Utah teapot (300 pixels across) rotating about y axis, lit with a single-direction light source

programming for every object. For example, if you were animating a character's arms, you could apply the same movements to the hands and fingers with the minimum of effort. The ultimate test for a system like Reality Lab is games programming, and this is where RenderMorphics is focusing its marketing efforts. The company has already attracted major clients such as Virgin and Mindscape, but it refuses to confirm any link with Sony — even though it is widely accepted that Sony is on the brink of signing up for the system. Reality Lab could make PlayStation games even faster than originally

envisaged.

Kate Seekings, RenderMorphics' sales and marketing director, denies that this will result in software houses churning out similar games. "Imagine asking 20 teams to build a house and giving each planks of wood, a saw and some nails," she says. "Would they build 20 identical houses? Of course not. We've seen many projects in development using Reality Lab and all of them are completely different."

Reality Lab is intended to provide a basic framework on which users can build. "We supply a lot of our source code

examples to customers and they manipulate it and write their own, more specialized tools to fulfill their requirements," says Keondjian. The result is a modular system, with programmers



"We're encouraging people to use 16bit color at 640x480. With game technology, you just can't look back"

Kate Seekings, sales and marketing director

using only the parts they require, thus saving memory and time.

Just as important as raw power to the success of Reality Lab is a streamlined front end. "The first thing we did after forming the company (in 1991) was to design a very intuitive 3D interface," recalls Keondjian.

Users attest to the system's ease of use. "Given a knowledge of C and viewing matrices in a 3D context, plus some OpenGL basics, the source code provided gives hard results in a few days," was one verdict.

RenderMorphics accepts the importance of cooperation in today's competitive market. Matrox and Cirrus Logic graphics cards are supported as well as GLINT, and Creative Labs recently signed a deal allowing it to use Reality Lab's graphics libraries.

RenderMorphics is committed to advancing development techniques. "We're encouraging people to use 16bit (65,536) color at 640x480 resolution," says Seekings. "With game technology, you just can't look back."

With Pentiums rapidly becoming the norm, this kind of foresight is what the games industry needs.

ng



Full z-buffering is available in Reality Lab. Objects are clipped even if passing behind complex constructions like this revolving space station

breaking

Sega reels in Neptune

A combined 32X and Genesis machine "for under \$200" waits in the wings...

It is...

The Kyoto HQ of Nintendo, a company which started off manufacturing playing cards and has since become the powerhouse of the videogames industry. Its position is now threatened by Sony


Sources inside Sega have confirmed that a combined Genesis/32X unit is planned for release later in 1995. Codenamed Neptune (a planet slightly smaller and — if **NEXT Generation's** astronomical experts are to be trusted — next in line to Saturn), the new machine will retail for "less than \$200."

This move comes as no real surprise to gamers, the only real question concerned whether Sega would see fit to include a Sega CD mechanism in the package. The decision to keep the Neptune cartridge based is reaffirmation of both Sega's faith in the cartridge as a viable data storage medium in an increasingly CD-oriented world, and the Sega CD's continued failure to come up with truly ground-breaking software. It would seem that Sega CD development has been sidelined by Sega, with the company's key development resources aimed at the still-profitable Genesis market and the imminent Saturn.

To coincide with the release of Neptune, a price reduction of 32X has to be expected. Sega would like to dip below the crucial \$100 mark, but continued exchange rate difficulties may make this impossible. Meanwhile, sales of 32X over the holiday period have been at the same time "exceeding supply" (according to Sega), and "middling" (according to everyone else). A more accurate picture of 32X's fortunes in the crucial stages of its infancy can be expected next month.

While many gamers may yell "unfair!" at news that a recent purchase may now seem overpriced, you have **NEXT Generation's** condolences. But Sega can't be accused of anything other than following the standard pricing practices for new hardware platforms — just ask a 3DO owner who bought in at \$799 the week before the price

was slashed to \$399. It's just the way the home electronics cookie crumbles.

The real concern of 32X owners should focus on the system's continued lack of quality titles. While news of an "arcade perfect" *Mortal Kombat II* still teases, the title has yet to reach the stores. Meanwhile, Sega's own release schedule continues to disappoint (read the reviews on page 93) although good news is promised at the Consumer Electronics Show (CES). Read the comprehensive **NEXT Generation** report from the floor next month... 



Yet another descendant of the Genesis (top) is set to launch later in '95, following the WonderMega and CD-X Genesis/Sega CD combos. Neptune will incorporate 32X's twin Hitachi 32bit chips and retail for a Jaguar-challenging \$200

Sega would like 32X to dip below the crucial \$100 mark, but continued exchange rate difficulties may make this impossible



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>>pmolyneux@ea.Bullfrog.com (Peter. Molyneux): >"Never!" I hear you say,
>"Besides what else is there?" Well, there's Magic Carpet (tm) for one.
>>It's fresh, innovative, with breakthrough technology. Let me give
>you some reasons why Magic Carpet soars above all the Doom-style games.>>

Why Walk When You Can Fly?



>>Flying is truly the
>only way to go.
>>In Magic Carpet you
>rip and dive through
>a 3D fractal world.
>>The landscapes morph in real-time
>while the frame rate stays high.
>>We like it.>>



Why Be A Hall Monitor?

>>The outdoors
>are nice.
>>Wouldn't you
>say?>>



>>With 50 different worlds to romp and
>leave a path of destruction through, you'll
>never get claustrophobic. >Of course, that
>also means no easy corners to protect you
>from the hordes of unrelenting beasts.>>



Why Not Double Your Pleasure?



- >>And you thought your
- >company's productivity
- >was hurt before?
- >>Magic Carpet handles up
- >to 8 players on a network.
- >>If that weren't enough,
- >we have a 3D mode that
- >requires glasses and a
- >stereogram mode.
- >>VR helmets too.>>

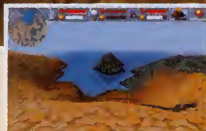


Variety Is The Spice Of Life. Right?



>>Doom gives you the
>BFG9000.

>>They should've called
>it the "B.F.D." >Magic Carpet gives you a
>lot of wicked spells. >(24, for people who
>like numbers.) >The result is a variety
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>>lightning storms, volcanos, meteors.>>



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Check your local Retailer or call 1-800-245-4525.

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>Download the demo from any of the following locations:>>

INTERNET: ftp.ea.com (in the \pub directory)

COMPUSERVE™: Game Publishers A Forum\Electronic Arts (GO GAMEAPUB)

AMERICA ON-LINE™: Keyword PC-GAMES (in the \demos directory)
Or search for the carpet.zip file on your favorite service

>

>>Or go Analog and dial 1-800-245-4525 and we'll send you the demo

>for \$2.95 (cheap marketing bastards won't cover shipping and handling).

>

>>Or for \$52 we can send you the entire product with a 14-day money
>back guarantee.>>

>

>

>

P e t e r M o l y n e u x

Disclaimer: EA does not know I'm posting this message.
(pmolyneux@ea.Bullfrog.com)



JOYRIDING

ngonline@aol.com

by Bernard Yee

The first in a regular series of gaming updates from cyberspace

o listen to the pundits, you would think that the modem is the most potent tool for social change since the automatic weapon. People (well, vice presidents, at least) never really talk about the modem itself when they talk about the technological revolution. They use flabby, loaded terms like 'information superhighway.' I'm still fuzzy on this concept, but I think it means being able to download nude pictures of Cybil Danning from a bulletin-board system in Uzbekistan, something which I stand foursquare behind.

We are being told that we are on the cusp of a new era of personal interconnectedness, where modems and phone lines will allow the free exchange of ideas and hard data, facilitating a rapid growth in civilization itself.

We are also told that we are on the cusp of building a space station, launching a Mars mission, and giving free health care to every citizen, but I would not be too quick to pack my space suit or cancel my health coverage yet.

Anyone outside of a corporation or college who has tried to get — and pay for — an Internet connection sees the 'information superhighway' for the chlmra it is. Anyone who has an Internet connection knows that it is a tangled mass of disparate BBS systems, user groups, FTP and Web sites, and arcane codes inherited from UNIX. Not exactly the sort of thing a nation of folks who can't get their VRC clock to stop blinking are going to take to like a fish to water.

For those who are wired in, however, entire new vistas are opened: databases full of information, experts to answer questions, software to increase productivity...

Who are we trying to kid here?

Modems let us slaughter our friends in deathmatch *Doom*, fly *Red Baron* against the hot shots who hang out on INN, or be a wingman in *Wing Commander Armada*. Modems open up an entire new world of gameplay. You don't have to match wits with a programmed and artificial intelligence, but with a calculating and unpredictable human being. Or you can plunge headfirst into danger with a true buddy at your side, protecting your back

and saving your ass in the tight spots. Productivity and information are nice, but games are the real stuff of the technological revolution.

Throughout history, games have been a way to socialize. With no television or movies, games became a prominent pastime that crossed all social boundaries. They were a way for people to interact and spend time together. Computers and videogames have, for too long, isolated people. Modems are a way to open that social isolation and reconnect people. More than that, they can connect people thousands of miles away. Numerous modem gamers and on-line folks have talked of friendships forged across the phone lines. 'Cyberspace,' or the 'infobahn,' as it has been dubbed, has created whole new forms of human interaction, and that is what I am here to write about.

Right now, there are millions of people connected via modem in one way or another. The world of modem and on-line gaming is exploding, and sometimes it gets hard to track it all. Over the next few months I'm going to look at the major on-line services (CompuServe, America On-Line, Prodigy, GEnie, and the Imagination Network), attempt to navigate the myriad of gaming elements on the Internet and various BBS systems, discuss direct connections and the best modem-supported games, and check out the nascent interactive television industry. Network gaming, technical and social issues, dedicated gaming platforms, and individual game techniques and strategy will all be subjects for discussion as well.

What do you need to know? Just drop me a note at **NEXT Generation** with your suggestions and questions. We'll explore this weird new world together.

Bernard Yee is a contributing writer for PC Gamer and CD-ROM Today



Friendly invites pop up frequently in The Imagination Network

Data stream

UK preChristmas TV marketing budget for the Game Boy: **\$1,606, 200**
Damages awarded against Nintendo over the Game Genie affair: **\$15 million**
Number of pages that could fit onto one CD-ROM: **200,000**
Distance a standard CD's pits cover when layed together: **5km**
Average distance between human eyes: **65 mm**
Sampling rate adequate for human voice: **11KHz**
Sampling rate adequate for FM radio: **22KHz**
Sampling rate adequate for CD audio: **44.1KHz**
Number of lines on a VHS tape: **260**
Number of lines on an SVHS tape: **400**
Nintendo's share of total videogames revenue in 1994: **65%**
Nintendo's share of total videogames profits in 1994: **82%**
Nintendo's cash funds, as of March 31, 1994: **\$3,334 billion**
Nintendo's outstanding debts: **\$0**
Nintendo's liabilities: **\$1,427 billion**
Number of Jaguars Atari plans to have installed in the UK by the end of this year: **100,000**
Number of Jaguars Atari plans to have installed in the US by the end of this year: **400,000**
Number of PlayStations secured by importers at the time **NEXT Generation** went to press: **9 (ish)**
Number of Commodore Amigas in worldwide circulation: **6 million**
Loss made by Commodore during 1993: **\$356.6 million**
Number of LaserDisc players in the UK: **25,000**
Cost of Pioneer's CLD 2950: **\$1,124**
Cost of *Jurassic Park* on PAL-standard CAV LaserDisc: **\$80**

breaking

US and UK fight over Amiga's future

The battle for control of the Amiga still has no clear winner

Amiga heads RISCward

The Amiga line has already embraced 32bit technology, although the lack of custom hardware has not endeared the A1200 or CD32 to gamers in search of visual thrills.

The next generation of Amigas will be based on Reduced Instruction Set Computer (RISC) technology, run Windows NT, and possibly be front-ended by the AAA chipset, the fate of which has yet to be decided.

Commodore's history is scattered with soap-opera peaks and valleys. Now, the Amiga-manufacturer's future once again hangs in the balance as a company buyout aims to ward off collapse.

The Bahamian receivers, Touche Ross, have compared the liquidation and consequent sale of the multinational company to the Robert Maxwell/Mirrorsoft debacle. For instance, patents, licenses, logo copyrights and ownership of remaining stock all belong to different parts of Commodore International, split between divisions in the US, UK and Germany.

But while the UK management buy-out team — headed by joint-MDs David Pleasance and Colin Proudfoot — has been evangelizing to anyone who will listen on a future version of Commodore run entirely from the UK offices, the other main competitor in the race has chosen to keep quiet.

CEI (Creative Equipment International), which is based in Miami, Florida, broke its silence to speak to **NEXT Generation**. Alex Amor, president of CEI, stated that he is so confident of securing the Commodore deal that its manufacturing partner is getting ready to

begin production of A1200s, A4000s and CD32s. He explained that tooling up now would save as many as 35-40 days when the deal is finally signed.

Amor went on to say that "CEI has the interests of the UK market in mind. We understand that the UK is an important market and will do our best to support that market."

This comes as something of a surprise given that David Pleasance believes the right to carry on the Amiga line is as good as in his hands.



Spearheading the UK management buy-out of Commodore is the MD of the UK operation, Colin Proudfoot



Producing the A1200 in volume is vital to the success of the Amiga line. But who will be responsible: Commodore UK or Miami-based CEI?

At last month's Future Entertainment Show in London, Pleasance addressed a crowd of loyal Amiga users, publicly stating that he believed the MBO would succeed in its bid and that production of Amiga hardware would begin in the new year.

Future plans for the new company, he explained, involve tripling the R&D team in the US, and plowing ahead with a RISC-based Amiga which would be "far more powerful than anything our competitors have planned."

It has been rumored that the failure of the UK management buy-out — if, indeed, it has failed — was due to difficulty in transferring funds from its Far Eastern backers. **NEXT Generation** does expect the last and final chapter of this long-running saga to appear in its next issue.



Chickenhead is no more

Irrespective of the outcome of the sale of Commodore, the ill-fated 'chickenhead' logo is doomed. CEI will continue trading under its name, and the logo has already been dropped by the remnants of the UK operation. Any new company rising from the ashes of CBM International will favor reliance on the Amiga name and branding — 'Amiga International' has already been suggested as a new company herald.

Movers & Shakers

A monthly look at business news affecting the gaming world by Selby Bateman



Selby Bateman, the executive editor of *Computer Entertainment News*, the US's leading trade newspaper for the computer leisure industry

THIS REALLY IS ROCKET SCIENCE!

NEWSLINE: So what if its games are any good? The coolest action from Rocket Science is its Home Page on the Internet, complete with previews of upcoming games, photos and info on key people, and a clutch of Rocket Science-branded merchandise you can buy on-line.

BOTTOMLINE: This is 'future-biz,' Internet style. The digital autobahn is an equal-access highway, and Rocket Science is not afraid to use it. With some \$20 million in venture capital and well into producing its first round of games, the whiz-tech crew at Rocket Science is also showing how businesses must evolve and digitally branch out. ANY budding cybernaut can access this stuff. That's YOU, phone dude (www.rocketsci.com).

MO'NET MO'NET MO'NET

NEWSLINE: All of this Internet stuff is NOT just the buzzword du jour. Everyone's doing it, from videogame manufacturers such as Sega of America (www.segaa.com) to the king of software, Microsoft Corporation (gopher.microsoft.com).

BOTTOMLINE: Between the new Internet craze and the rise of multiple-player games, why would any interactive game machine NOT ship with an on-board modem and software — or at least a parallel port ready to do the same? All eyes are watching the new XBand Video Game Network for Genesis and Super NES. XBand supplies a modem and matches up players with one another. The new year of 1995 could well see on-line videogaming finally take off.

THROUGH THE LOOKING GLASS

NEWSLINE: Pushing the envelope on realistic flight simulations is the business of Cambridge, MA-based LookingGlass Technologies — the same development talent behind such screaming successes as Electronic Arts' *Chuck Yeager's Flight Trainer* series and Origin's *System Shock*. By the end of February, LookingGlass was scheduled to publish its first PC CD-ROM title, *Flight Unlimited*, under its own label. So what?

BOTTOMLINE: 1995 is going to be a real dogfight in the flight-sim and aerial-combat categories, and LookingGlass is betting its bankroll (including a recent \$3.8 million venture-capital infusion) that it can capture significant market share from the likes of Microsoft *Flight Simulator* and the debut of Spectrum HoloByte's *Falcon 4.0*, among others. Expect the skies to be filled and decidedly UNfriendly — on the marketing front.



Photo-realistic terrain and excellent flight dynamics make LookingGlass Technologies' *Flight Unlimited* look like a high flyer

ABSOLUTELY SEGA STREET

NEWSLINE: Sega of America debuted a 30-minute infomercial for its Genesis 32X add-on during Thanksgiving weekend and kept it playing in top-20 TV markets through the holidays. Called "Absolutely Rose Street", the program takes a "Wayne's World" sitcom approach to pushing Sega hardware and software.

BOTTOMLINE: Ever since Sega boosted its market share versus Nintendo of America with an in-your-face ad campaign for Genesis in 1993, Sega's ad approach has been widely studied — and copied. This new infomercial-with-a-plot is very different: No dumping on Nintendo and a decidedly soft sell. But will it move 32X? The dust should be clearing soon.

IF 32X IS TOUGH TO POSITION, WHAT ABOUT VIRTUAL BOY?

NEWSLINE: If you think that Sega might have trouble in '95 positioning the Genesis 32X with Saturn in the wings, just consider Nintendo's positioning on the hand-held Virtual Boy? Say, what?

BOTTOMLINE: That's right — Virtual Boy, hand-held-with-a-headset, recently debuted in Japan and has been tentatively planned for spring 1995 release in North America. Nintendo of America must decide whether it's worth it to bring to market this 32bit, RISC-chip-based, virtual-reality handheld system. Nintendo of Japan owns a minority interest in Waltham, Mass.-based Reflection Technology, which in turn owns the VR LED technology. Of course, we thought Game Boy was a weird name; so don't count out Virtual Boy.



Will Virtual Boy rule the world? That's a cute tripod, but my neck is killing me

SPEAKING OF VR, HOW ABOUT VIRTUAL I/O?

NEWSLINE:

Who's going to deliver the first successful VR headsets for multiple platforms? Virtual I/O of Seattle is covering the waterfront with its line of Personal Display System (PDS) headsets. The units create visual effects from any standard video output, including TV, VCR, videogame system, or (with a converter) PC.



Virtual I/O's I-Glasses, priced at \$599, display two- and three-dimensional movies, videogames and television programming

BOTTOMLINE: After many high-flying promises, the VR headset market is about to take off in 1995. Improved technology and much greater cost efficiencies will allow for some real fun to enter the virtual world. Virtual I/O is getting a jump on the market with three different versions of the 8-oz to 11-oz headsets.

breaking

Gamehouses flock to Silicon City

SGI's Japanese show proved popular with game producers

Over the past year, the relationship between games producers and the purveyors of high-end graphics technology has become increasingly cozy. The Nintendo/Silicon Graphics deal is the highest-profile example of the growing collaboration between the two fields, but there are many other graphics specialists looking for a slice of the lucrative games market, and just as many entertainment companies searching for new developments to give their games a technological boost.



At Silicon City (top), image-generation professionals mingled with interactive entertainment specialists (above)

So it came as no surprise to see the recent Silicon Graphics show in Yokohama, Japan, attended by gamehouses eager to see what the leading-edge computer technology company had to offer. The theme of 'Silicon City' was the integration of high-end graphics with affordable home entertainment, with Rare's *Donkey Kong Country* well-employed as a 16bit taster of what new technology can provide now and in the future for games.

The focus of the show was a range of new Silicon Graphics hardware. Indigo Extreme, Power Indigo and Power Onyx are obviously upgrades rather than revolutionary steps forward, but they



Silicon Graphics' new kit (above) was the show's central attraction. The Indigo Extreme sounds more like a surfboard than a computer...

generated excitement nevertheless. Also appearing for the first time was the latest version of the Challenge fileserver. Based on a MIPS 8000 chip running at 200 MHz, this hardware made almost every other piece of technology at the show seem positively antediluvian.

The ubiquitous Sony was also present, a month before the launch of the PlayStation in Japan. The company was represented on this occasion by its Sony Music Entertainment division, which was touting the PlayStation game *Kileak The Blood*, a futuristic, first-person, 3D, robot shoot 'em up laden with prerendered cut-scenes. The SME connection is due to the game's musical score, but the dazzling reflective lighting effects and realtime texture mapping on display made it relevant to just about anyone with an interest in the future of game graphics.

And for ¥3,200,000 (about \$33,000) you can be the proud wearer of a Cyber Glove. This device was developed by SolidRay to facilitate the manipulation of virtual objects such as molecules and architectural models. Add an Onyx and you've got one hell of a Doom set-up...



Represented at the conference was RaySolid's Cyber Glove which costs a cool \$33,000

ng

Generator

by Mark James Ramshaw

Word from the sharp end of games development, this month focussing on the controversial subject of 32X...

Welcome once again to the corner of the magazine which digs into what techniques the big developers are using, and finds out just what the industry *really* thinks of the latest happenings.

This month the spotlight turns to Sega's newly launched 32X system. A halfway house between existing game technology and 1995's 32bit explosion, the 32X stands accused by many critics of being an ill-conceived, quick cash-in which currently has little software support and may not receive much in the future. Some even foresee Sega ditching the machine as early as the next holiday season, dumping from a great height on any Genesis owners foolish enough to fork out money for this mushroom-like upgrade.

So Sega, is the 32X a rush job, a pre-Saturn stopgap?

"Of course it's not a stopgap," states Sega UK's marketing man Mark Maslowicz. "The simple fact is that we've got such a large 16bit user base in the US and Europe that we'd be foolish to let that go, and we can't seriously expect all existing Sega owners to be willing or able to hundreds of dollars for the Saturn as soon as it's released."

What about software support?

"There are currently 100 titles in development for release before Christmas '95, and (more than) 50 of those with third party developers. We're totally dedicated to the machine and we intend to push the 32X right through to the end of '96, maybe longer."

But what about Saturn?

"We don't see any reason why the two machines can't coexist. Saturn will take some time to build up a user base anyway—you've got to realize that the Saturn is much more than a games machine. There will be an add-on keyboard available, a modem, it's going to be an open-ended system, and so it's very much a long-term product. We really don't believe the average game player will be willing to afford a Saturn, PlayStation or whatever, not immediately at least."

But just how well thought out is the whole 32X project? Part of the machine's selling point is that it's packing two 32bit chips which are also to be found in the Saturn (it's a clutch of custom chips which will give the Saturn that extra oomph). Sega obviously has a huge amount of these chips at its disposal, so it must have seemed like a brilliant idea to bring out a Genesis add-on which could make use of them. In practice, getting the Genesis and 32X to work smoothly is far from simple, and a very short time between conception and launch couldn't have helped any. Programmers in the know say that, for the most part, the problems have now been smoothed out, though the add-on was by no means a dream to have programmed. "Yeah, it's got some problems," said one developer. "But what piece of kit hasn't?"

Feargus McGovern is head of Probe Software which has just completed coding *Mortal Kombat II* for the 32X. "We find it a surprisingly good piece of hardware," he enthuses. "If Sega markets it well, and it gets third party support, then I believe it'll be very successful. Even though the Saturn has had a good reception in Japan, the market will be tough next year."

So you're meant to see the 32X as being the affordable option.

"Yeah. The first thing potential buyers of the new machines will look at is price," said McGovern. "They shouldn't look at what the machines can do, but what games they can play. These 320, PlayStation and other 32bit machines are very powerful, but they can really be perceived as multimedia systems. If you want a games machine, then the 32X does the job very well. 32X *Mortal Kombat II* is practically a full coin-op game in the home."

But does it have a future beyond 1995? Feargus again: "I'd say so. So long as it gets software support, I think it'll do very well."

It seems then, that the fate of the machine lies with in the hands of the games developers. Stay tuned...

Mark Ramshaw is a free-lance journalist and games designer, currently residing in the places other game magazines don't even know exist

breaking

Datebook

February

Intermedia '95 February 7-9, 1995 San Francisco, CA. Moscone Center. Closed to the public. Leading CD-ROM and multimedia tradeshow showcase for hardware manufacturers and multimedia software publishers. There will be a show floor for the manufacturers and a concurrent conference with booths, speakers, panel discussions and industry leaders. Total attendees forecasted at 23,000. For more information call Reed Exhibition Co. at (203) 352-8254.

March

Folio—Midwest March 13-16, 1995 Chicago, IL. Located at the Sheraton Chicago Hotel and Towers. For magazine and book publishing professionals. This show—Folio:Show's 20th anniversary—is composed of publishers showcasing educational programs, pre-press technologies, and new media, and covers all aspects of magazines and book publishing. Produced by Cowles Event Media. For more information call: 1 (800) 927-5007.

Software Publishers' Association Spring Symposium, 1995, San Diego, CA March 11-15. This symposium is for top executives from software pubs and others associated with publishing. There will be seminars, heavy networking, more than 1,500 in attendance. Not open to the public. Primarily CD-ROM based entertainment, consumer and business applications, some cartridge products will be available. Mostly panels, CODY's gaia at the end.

New Media '95 March 14-16, 1995 Los Angeles, CA, LA Convention Center. Chiefly for corporate managers, technology enablers, information transporters, content providers, and those interested in business and revenue opportunities based on new technologies. 15,000 total people attend. 140 companies will exhibit. Reflects the major aspects of the digital revolution. Booths will appear on a show floor, and the conference is educationally based. There will be 40 conference sessions on various topics. For more information call The Interface Group at (617) 449-6600 and ask for attendee registration.

Computer Games Developers' Conference in conjunction with the Santa Clara Convention Center Saturday night through Tuesday night April 22-26 Westin Hotel, Santa Clara. Organized by computer developers for computer developers. This annual conference is composed of seminars that range for in-house and independent developers on topics such as art, animation, sound, playability, interface, legal issues for independent developers, etc.; meals included; booths are very limited. This is not a marketing conference. Awards for various games, and an awards banquet. Open to the public. Between \$275-\$650. Call (415) 948-2432 (CGDC).

May

E3 (Electronic Entertainment Expo) May 11-13, 1995 LA, CA. Showcases entertainment software, retail products, video, book catalog, record and other mediums. Designed for entertainment software title publishers, developers, content providers, and property rights marketers. For more information call Knowledge Industry Publications at (914) 328-0649.

SHOW ORGANIZERS: If your show isn't listed here, it's because you haven't told **NEXT Generation** about it. Do so by calling (415) 696-1688, or FAX information to (415) 696-1678, or send details to DATEBOOK, **NEXT Generation**, 1350 Old Bayshore Highway, Suite 210, Burlingame, CA 94010.

Essential reading

Behind the Scenes at Sega: The Making of a Video Game



Nicholas Lavroff

Publisher: Prima Publishing
Release Date: Available now
128 Pages

As the videogame industry expands at blinding speed, the next generation of players will take the thrown and make it theirs. The question is, how? High school education provides little if any schooling in programming, chroma keying, or the intricacies of animation, and networking is still the best way to get a job. This is why

Behind the Scenes is a vital introductory guide defining all the major pillars upon which a videogame, and the industry in turn, are built.

Behind the Scenes dives into the massive gamemaking pool head first. From the planning stages — in which scripting and designing set out the puzzles, characters and parameters — to animating characters, *Behind the Scenes* emerges wet with good facts, self-references and promotion, but what is one to expect from an entertainment company?

Bright spots are early, goofy sketches of Shiny Entertainment's *Eartworm Jim*, demonstrating the level of planning and detail involved, as well as interviews with early animation personalities like the Warner Brothers' pioneering genius Friz Freleng, and inside angles from Sega's audio engineer and musician Spencer Nilson.

Easy to read, packed with pictures, — including a special color section on *Eartworm Jim* — stories and the essentials of making a game, *Behind the Scenes* answers the real life questions as to how Sega's games are made. It is an excellent read for both young and old.

Net Games

Michael Wolff

Publisher: Michael Wolff & Company, Inc.; Random House Electronic Publishing
Release Date: Available now
272 Pages

One of the most comprehensive, entirely dedicated guides to Cyberspace games, *Net Games* fashions none of the trite Cyber-foam of *Mondo 2000*, it let's the content speak for itself, wearing a rather "Ren and Stimpy" grin. Using this book one can find cool MUDs, MOOs and MUSHes from Anne Rice's *Vampire Chronicles* to *FurryMUCK*; multiplayer scrimmages like *Cyberstrike*, *Doom*, and *Bolo*; strategy classics; or electronic board games like chess, backgammon, even *Jeopardy*. If you're a newbie, check out the game boards list or the required eight-page glossary, if you are an anal organizer, the chapters list games by kind — strategy, classics, personal computers and videogames, and of course, Chapter 6, Sex, Hubs, MUDs and more — and if you're an old pro, it is an excellent, occasional reference guide.

GIVEAWAY!

NEXT Generation is giving away free copies of *Behind the Scenes at Sega: The Making of a Videogame*, courtesy of Prima Publishing. The first 100 postcards at our door will receive a copy. Send a postcard with your name and address to "Book Giveaway" **NEXT Generation**, 1350 Old Bayshore Highway, Suite 210, Burlingame, CA 94010.

Over the wire

A regular spot where **NEXT Generation** reports on how technology will shape the news of the not-too-distant future...

From an original idea by **Richard Bird**

InterSuperNet Bulletin
Date: 4 March 1998
Time: 14:57:05

Five organizations today filed an injunction against Cim-Labs International to stop production of their DNA Expander software. The group, headed by the Committee Totally Against Abortion and the Praise Be Corporation, claim that the program is not only illegal but breaks all moral and ethical codes.

The DNA Expander system, which has taken Cim-Labs 10 years and \$2 billion to develop, is designed to copy a sample of DNA from any living creature and grow it at a vastly accelerated rate in virtual storage, resulting in a biologically correct simulation of the original subject.

The Committee Totally Against Abortion claims that the software could be used to grow DNA taken from embryos into adults, and speculate that there could be instances of terminations happening simply because the child's appearance in later life does not appeal to the parent.

A spokesman for the Praise Be Corporation said today: "This is another example of scientists playing God. If the DNA Expander gets into the wrong hands it could easily lead to an attempt at Eugenics."

But Cim-Labs maintain that the software will only be sold to carefully chosen organizations for socially responsible purposes. They argue that it is counterproductive to proscribe a product with so many possibilities and potential benefits for humankind.

One such use, say scientists, is in the elimination of crime. The European Federal Police Force is thought to be extremely interested in the software, which could grow any organic sample taken from a crime scene into a complete image of the person from whom it originally came. It would then be a simple matter of matching the virtual criminal to the information stored on the European AOW (AnyOneAnyWhere) central database at New Basingstoke. The police believe that if they were permitted to use the software, the clear-up rate for new investigations would approach 100 per cent.

The International Supreme Court is scheduled to make a decision on the future of the program tomorrow at 14:30 GMT

...transmission ends...

Contributions to **Over The Wire** are welcome. Please send your articles (400 words max) to **NEXT Generation**. Get your piece printed and win a year's subscription to **NEXT Generation**

Arcadia

The **coin-op business** is an excellent barometer of what's coming to the home. And here it is...



Marcus Webb is the editor-in-chief of *RePlay* magazine, the US's leading trade amusement magazine

by Marcus Webb

Virtual Reality

British-based Virtuality Group is the world's leading developer of 'immersive' VR for entertainment purposes. (Immersive virtual reality features headsets or goggles with graphics keyed to the player's head motion.) Virtuality Group is already on its second generation of hardware; and 21 nations now have dedicated VR centers using their machines, from Russia to Kuwait. Latest entry: Bangkok. But so far, only a hundred immersive VR machines (of any brand) are available in American arcades and theme parks.

Now Sega may be getting ready to give the Virtuality Group a run for its money. Sega showed an Immersive VR shooting game at a recent Tokyo trade show. This game is already up and running in a new Yokohama theme park owned by Sega. Sega has long said VR will definitely play a major role in its own worldwide chain of arcades and parks, now under construction.

Sony & Blockbuster get into LBE Complexes

LBE stands for "Location-based Entertainment", a category of super-arcade that's getting bigger and hotter all the time. LBE's usually offer expensive, hi-tech, motion-based simulators in lavishly themed locations.

Now, Sony Corp. of America has formed a new company, Sony Retail Entertainment, to design, develop and operate a worldwide chain of themed LBE complexes. Besides motion simulators, Sony's sites will feature various types of movies (3D, interactive and IMAX), plus retail outlets and restaurants. These LBE complexes could also feature many famous names and licensed properties associated with Sony's motion picture and music subsidiaries.

Also, Blockbuster Entertainment Group, a division of Viacom Inc., already opened its first LBE complex in Albuquerque, NM, on December 19, 1994. Called "Block Party," it's an indoor, high-tech playground including

motion hand simulators, video and pinball arcades, giant TV screening rooms, multilevel mazes, restaurants and shopping. The target audience is adults aged 18-46.

Insiders say at least four more "Block Party" sites are on the drawing board for 1995 and Blockbuster Entertainment Group chairman Wayne Huizenga has said he eventually wants to build a "neighborhood Disneyland" in just about every suburb, town and city in America...

Nani Moves Toward Text Phase

The National Amusement Network, Inc. (NANI) is moving ahead with plans to link arcade videogames via modem for local, state and national game tournaments in 1995. During October, prototype units were linked over phone lines to the central network — which is run by Ross Perot's former company, Electronic Data Systems. A larger-scale public test is slated to start in early to mid-January. This test will link 50 NBA *Jam* videogames in arcades and other locations in Kansas and Ohio via the EDS circuit. Newer games will be featured for NANI's national rollout, which arcade owners hope to stage by mid '95.

Sim Centers Linked for Remote Interactive Gameplay

Virtual World Entertainment (VWE) simulation centers in Dallas, Chicago, San Diego, Las Vegas and Walnut Creek, CA, are now equipped with 'Sitelink,' a transmission network that enables players in different cities to compete with each other. VWE centers typically consist of 16 linked, closed cockpit simulators in a movie-set environment; games cost \$7 to \$9 for a half-hour of play. Sitelink connections for remote interactive play are scheduled for Sundays only; this costs an extra \$3. VWE began life in Chicago as Battle Tank Center, the company was later purchased by Tim Disney (Walt's nephew), who invested \$10 million and led the firm's expansion to new sites. Latest US opening: a sixth VWE center began operations in Glendale, CA in mid-November.

Namco and Sega Simulators: Heading for the Theme Parks

Theme parks and amusement parks around the world are getting excited about the new generation of high-tech, video, race-driving simulators from Sega and Namco. During the annual trade show for parks, held in November, Sega drew packed crowds to its *Daytona USA* exhibit, featuring eight moving simulator videogame cabinets which were linked for interactive play. At the same expo, Namco's *Ace Driver* was voted "Best Coin-Operated Game" due to its texture-mapped polygon graphics, variable feedback steering, and cabinet motion.

Namco also had eight *Ace Drivers* linked together; they reported "overwhelming" orders for this game which is shipping at this moment. Park owners are used to paying 1 million and up for Ferris wheels and roller coasters...so paying \$750,000 or so for an eight-player, hi-tech video unit strikes them as a terrific bargain. The result of all this? Look for *Daytona USA* and *Ace Driver*, coming to theme parks near you!



Namco's *Ace Driver* (top) and Sega's *Daytona USA* (above) are two multiplayer games set for stardom in Blockbuster's and Sony's giant new theme parks



Wayne Huizenga wants to build a "neighborhood Disneyland" in every suburb, town and city all across America



oh **YES...**
more, MÖRE!
faster,
FASTER,



Tempo™



Cosmic Carnage™



Virtua Racing™ Deluxe

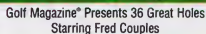
GENESIS 32X

[*What did you think we were
talking about, you little degenerate!*]

F a s t



Mortal Kombat® II
Acclaim



Doom™



Metal Head

Get your mind out of the gutter and back on video games where it belongs!

Because when it comes to thrills, Genesis 32X games dish out all the excitement you can handle!

They blast your optic senses with over **32,000 colors.**

32X games are more **THREE-DIMENSIONAL**, more **realistic** and **40 times faster** than 16-bit games.

And there are lots of hot 32X games that can satisfy your urges in ways other games can't. Once you get the **32X-PERIENCE**, you won't want anything else.

(Except that, you animal!)

er!

oh baby,
oh baby...



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is next



Sega

Saturn

Tech Specs

CPU

• 1 FH1 32bit CPU @ 28MHz

Memory

- VDRAM: 12Mbit
- Main RAM: 16Mbit
- Sound RAM: 512K
- Video RAM: 512K
- Backup RAM: 512K
- SubRAM: 32K

Graphics

- Resolution: 322 x 224
or 540 x 224
- Colors: 24bit palette
35,000 onscreen

- Sprites/polygons: VDP1 chip, dual frame buffer
- Backgrounds: VDP2 chip; 5 planes, 2 rotation planes

Sound

- 16bit 68EC000 processor @ 11.3MHz
- Yamaha FH1 processor
- FM, PCM, 44.1KHz sampling frequency, 32 voices
- DSP 128 steps/44KHz

Data storage

- Double-speed CD-ROM drive
- Cartridge slot

It wasn't supposed to happen. The possibility that its next-gen hardware would face serious competition simply hadn't figured in Sega's calculations. So when news broke in November 1993 that Sony was developing a videogame system capable of revolutionary performance, all hell broke loose. Those who had seen the machine working claimed that

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In January 1993, Sega announced the development of a 32bit console that would take videogames from the fading age of 16bit into a bright new era. For a while, the future belonged to Sega.



But it didn't stay that simple for long. Last month the Saturn arrived in Japan after a gruelling journey from conception to hard plastic. So what has Sega achieved? NEXT Generation investigates...

it was far more powerful than anything Sega had planned. Most threatening was the disclosure that it was to be released in late 1994 – the same time as the Saturn. To Sega's dismay, a powerful new rival had practically arisen overnight.

Sega's president, the feared Hayao Nakayama, was among the first to be informed. His reaction was typical. He immediately marched down to his consumer research and development

division and proceeded to ridicule the sum of his team's achievements over the previous year. For Sega to be beaten by Sony in the videogame arena (an area in which Sony had little previous experience) was totally and completely unforgivable.

The shock the Sony revelation caused to Sega can't be overstated. "There had been rumors," recalls one Japanese Sega employee, "but Sony's announcement took a lot of

people by surprise. It wasn't just the technology that worried people; it was the fact that Sony was planning to enter a market that Sega thought it would have completely to itself."

Sega's kneejerk reaction was to delay its Saturn development program by a few months to incorporate a new video processor into the system. Not only would this boost its 2D abilities considerably (something that Sony's machine

ng hardware



was less proficient at); but it would also provide better texture mapping for 3D graphics.

Unfortunately, this played havoc with the Saturn's carefully worked-out schedule, to the extent that many pundits thought that Sega wouldn't make it to the market in 1994. Some people even expected the company to cancel the Saturn and concentrate its efforts on a more system powerful for 1996.

One prominent developer who visited Sega Of Japan's Saturn division told **NEXT Generation**: "There's simply no way that Sega will be releasing the Saturn this year. (It's) behind on the hardware, behind on the software, and it's very hard to see how (Sega) can do it."

But, contrary to expectations, Sega has done it. The reality is that its 32bit machine has now been launched in Japan, and the same system is on its way to the US and UK later this year.

It was originally planned that the Saturn would be released in two forms: a CD-ROM-based machine, and a cartridge-only console, developed under the project name Jupiter. Compatibility between Saturn and Jupiter was to be achieved by means of a plug-in CD-ROM drive containing extra RAM. However, Sega anticipated that it would be problematic trying to sell higher-price, inferior versions of the same games that were



Sega's rear (above) includes a recess for a lithium battery (far left), a communication link, and RGB/video-out



The Saturn joypads (top) are similar to the Genesis pads, but with Left and Right buttons included

available on CD-ROM. The solution was to scrap Jupiter, and this is exactly what happened just a few months later. It was decided at this point that Saturn would be a CD-ROM console (the CD-ROM drive was to be developed by JVC), but with a cartridge slot to be used for expansion or data saving.

At around the same time, Sega made another important decision. It recognized that its most valuable market was the United States, and that it had to retain the enormous userbase it had built up with the Genesis. The answer was the Mars project, which resulted in the system we now know as the 32X.

Essentially, Jupiter became Mars, but whereas there had been a degree of compatibility between the Saturn and the Jupiter, it was decided that Mars would be a completely stand-alone system. Although the 32X and Saturn contain the same CPUs (but running slower in the 32X) the architecture was never designed to be compatible. And according to Sega, it has "no plans to release an adaptor."

The launch of

Saturn in Japan is Sega's most important hardware release ever.



Sega's Tokyo consumer HQ in Ohta-ku is where Saturn was conceived, and where **NEXT Generation** tested the hardware and software

Even though the company is placating its (admittedly minimal) Genesis installed base with the 32X (called Super 32X in Japan), which appeared on Japanese shelves just a two weeks after the Saturn launch, Saturn is by far the main event. Whether the Japanese have taken to 32X isn't yet known, but demand for the Saturn is high, even surpassing the momentum that had built up for the PlayStation launch.

Sega, which has always been sidelined in the Japanese consumer market, is now in a make-or-break situation with the Saturn. The company can't afford a reprise of the set-back it suffered in the early 1990s when the Genesis lost out to the SNES, and it admits that the next few months will be very tough in the Japanese market.

"Sega is terrified of what Sony is doing," revealed one Japanese source. "(The company) brought the machine forward by a week to try and

screw Sony, and the fact that *Virtua Fighter* is the only game worth buying for the machine doesn't seem to concern (Sega). In the first week (Sega was counting) on the game *Virtua Fighter* to shift several hundred thousand units."

Sega had announced that it planned to ship 500,000 units before Christmas. By this time next year, the company hopes to have sold two million Saturns.

Saturn's marketing budget is rumored to be huge, and a massive campaign has been running on Japanese Television both before and after launch.

"We have to do this because of the PlayStation," said an anxious PR manager. "We have to reach a 70% share of the next-generation hardware market. If we don't get at least 50% of the market share, we think that third party development will be slow. Third parties will not want to develop for a machine that has less than this level of penetration."

Sega of Japan's PR department has worked overtime during the Saturn launch period. Its efforts to boost Sega's profile within the Japanese gaming fraternity has focused on getting extensive coverage for the development of important titles like *Virtua Fighter* and *Daytona USA*. A myriad of Japanese game magazines has closely followed the Saturn conversion of *Virtua Fighter* since its debut at the Tokyo Toy Show (the version shown there was only two weeks into development) and its designer, AM2 head Yu Suzuki, has now



Sega staged a huge marketing campaign for the Saturn launch in Japan (funded by an equally massive budget). As well as heavy television promotion, eds such as this have appeared in most Japanese games magazines

attained almost star-like status among Japanese gamers.

Opening the doors to the media in this way has proved to be a shrewd move for Sega. It has given the company new credibility in Japan by showing that it isn't afraid to reveal the more intimate details of its preparations for Saturn. Japanese game companies are traditionally reticent about discussing technical issues with the press, so Sega's new approach is like a breath of fresh air to people used to fighting the obsessive secrecy of organizations like Nintendo. It is just the latest change in a company that is keen to internationalize itself. Anyone who has visited Sega in Japan will appreciate this — Japanese Sega officials will shake Westerners' hands, whereas a courteous bow will

win you more favor at a company like Nintendo.

Sega's decision to license the Saturn technology was a strategic coup which bodes well for sales of the machine. In a

"We have to reach a 70% share of the next-generation hardware market. If we don't get at least 50%, third party development will be slow"

move aping 3DO's open technology policy, Sega has licensed the Saturn hardware to three main Saturn development partners: Victor (JVC), Hitachi and Yamaha. All three companies

have Saturn-compatible machines in the pipeline, with Victor's V-Saturn machine (set to appear some time after the Sega version) apparently packing some new features.



Sega's marketing department needed to take on extra staff earlier this year to kickstart the Saturn hype machine. It seems to have worked



Anyone hoping to spot one of these in Babbages any day soon needn't bother. The US Saturn isn't due until late '95

ng hardware



Some of the first Saturn accessories include the Shuttle Mouse (left, ¥3,000/\$30), Joystick (center, no price yet), and the Multi Terminal 6 (right, ¥3,800/\$39), which enables up to seven people to play simultaneously. An SRAM cart is also in the pipeline



In another 3DO-style play, Sega is using Hitachi to handle a large part of Saturn's distribution in Japan. Hitachi will make the Saturn available through its chain of home electrical shops (which means that Sega doesn't have to rely solely on game stores) via a distribution company called Hitachi Mediaforce. This brings the number of retail outlets

several Hitachi staff were seconded to Sega's Saturn division (it's now believed that the same team is now working on preliminary 64bit technology for Sega), and the result was the SH-2 — or the 'SuperH RISC Engine', according to the logo emblazoned on the chip.

The SH-2 is a small (2 cm square) but fast RISC chip that has been designed primarily to process graphics. Like all RISC processors, it's more streamlined than conventional CISC-based chips and carries out instructions in far fewer clock cycles.

According to the chief Hitachi technician who perfected the chip, "The SH-2 has a high calculation efficiency. For magnifying, reducing and rotating 2D and 3D graphics, it's very fast. Apart from workstations, no chip can change coordinates as quickly."

The question of the Saturn's technical ability is the most controversial aspect of the entire saga. Ever since the machine's Sony-induced revamp, the Saturn has had more than its fair share of teething problems. Only recently were development systems updated to the point where they could be called 'final.' Originally, the Saturn was supposed to have one main CPU, but it was specced up to include another when tests revealed that a single chip was too slow. And the system control unit, or SCU — one of the main components of the Saturn architecture — has been subject to continual change.

The CPUs aside, the Saturn architecture is processor-intensive. As well as the twin SH-2s, there are five independent processors, including a sprite chip (VDP1), a background chip (VDP2), and — the pièce de résistance — a 16bit custom soundboard designed by Yamaha.

"Saturn's sound hardware is phenomenal," one developer told **NEXT Generation**. "It's way, way better than the PlayStation's sound — you can basically plug a synthesizer straight in and play it through MIDI!"

Like Sony's PlayStation, the Saturn 'cheats' by using a sprite engine to generate its polygons. Rather than creating true, depth-buffered polygons, the VDP1 maps sprites to geometry, which is much less demanding of processing power. In a game like *AM2's Virtua Fighter*, the characters are actually constructed from hundreds of mapped sprites. (The PlayStation works in a similar way, but has a geometry engine that can process more polygons.)

The upshot is that Saturn is an exceptional 2D powerhouse. For arcade-perfect conversions of traditionally bitmapped 2D games, it's in a class of its own. It delivers a huge number of scaled and rotated sprites, and can also shift up to five independent backgrounds (with two separate rotation fields also available).

Saturn's 2D power is confirmed by software

"Sega makes the world's best coin-ops and offers a way to bring them into the home. The best thing Sega has is confidence in its brand"

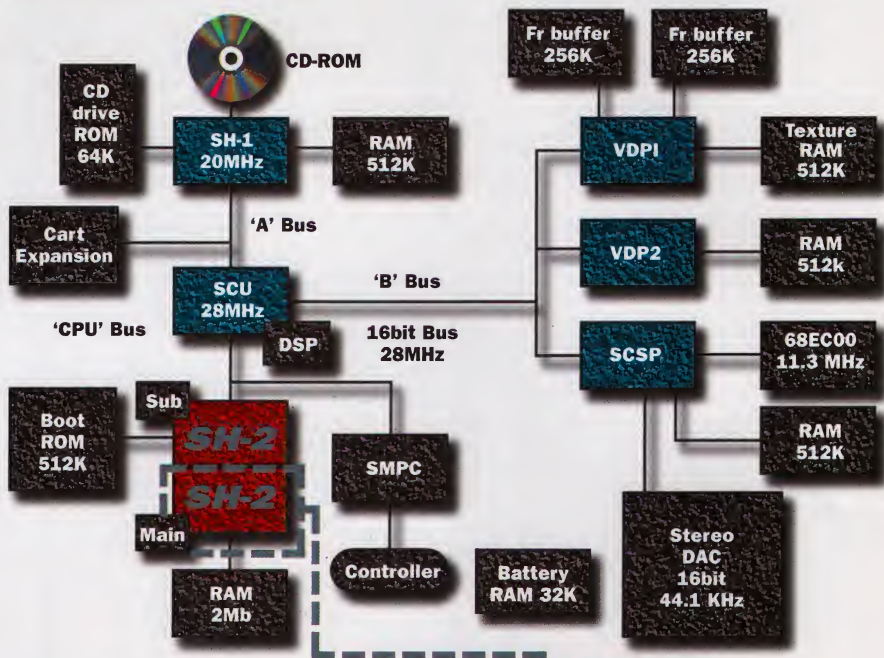
carrying the machine up to about 7,000 and provides Sega with the broad sales platform it needs.

But, of course, Hitachi's link with the Saturn project goes much deeper. In 1993, the Japanese electronics company set up a joint venture with Sega to develop a CPU for the Saturn based on proprietary Hitachi

JVC's V-Saturn is the first licensed machine from Sega's hardware partners. But will Sega's licensing policy pose a threat to 3DO?



Saturn hardware schematic



The Saturn's architecture is divided into a number of distinct components, represented by the above diagram. A detailed internal layout of the SH2 chips is shown opposite. As well as these twin CPUs, several other important chips are crucial to the Saturn's performance.

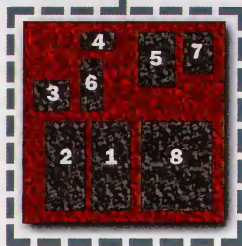
1. VDP1 Sprite processor. Because of the way the machine handles 3D, not only does this chip calculate all of the sprites, but it also maps sprites onto geometry. It relies on a dual frame buffer that handles rotation and pulls data from a 512K texture RAM cache.

2. VDP2 Background processor. This can generate up to five simultaneous backgrounds, and can also rotate two playfields (a la the SNES' Mode 7). It's possible to have three normal scrolls at the same time as a field of rotation.

3. SCSP This is the Saturn's formidable sound processor. Easily the most potent piece of hardware inside the machine, it boasts 32 voices, FM synthesis, PCM synthesis, and two CPU interfaces. It uses a 16bit 68EC000 and a Yamaha FH1 processor for an overall frequency of 22.58MHz. Other features include built-in DMA for file transfer, a 16 channel digital mixer and a 128-step digital signal processor.

4. RAM The Saturn's memory is split between a CD-ROM buffer, the VDP1 & 2 chips, and the SCSP. The total memory, at 4.5Mb, is the highest of any console (bar the Neo-Geo CD).

5. Boot ROM A massive 512K is taken up with the system's ROM. The Saturn allows different languages to be selected and a music CD option even allows the vocals to be removed from CD tracks.



SH-2

The SH-2 is only 2cm square, but it includes many different facets. This is a breakdown of the Hitachi chip.

1. CPU core The center of the CPU. Each SH-2 runs at 25 MIPS (2,500,000 instructions/sec) and has other functions besides the normal features of a RISC chip.

3. Bus state controller Interface to connect the CPUs directly to RAM. The SH-2 can exchange data with SRAM and DRAM directly, which reduces wait times.

2. Controller Checks to see if any of the joystick buttons are being pressed.

4. CPU interface The SH-2's 'window' to the rest of the Saturn hardware. Enables the chip to communicate with the other components.

5. Cache address array and controller The SH-2's 4K RAM cache holds data in an address array. The address controller manages the cache.

6. Division Calculates coordinates and processes information.

7. Multiplication Calculates coordinates and processes information, but in this case is managed by the CPU core.

8. Cache data array 4K of internal RAM to speed up processing.

ng hardware



developers. "It's a very nice machine," believes one. "For conventional 2D arcade games it's awesome."

With 3D graphics stealing the limelight in the arcades, it's odd to discover that Sega's emphasis on 2D performance can be traced back to its arcade division. The success of arcade games like *Virtua Racing* led to a belief within the company that it had amassed more experience of games technology than any other videogames manufacturer. Sega USA president Tom Kalinske hinted as much back in mid-1993 when he revealed the existence of the Saturn project.

But the projected overlap between Saturn and Sega's Model 1 technology — as used in *Virtua Fighter* and *Virtua Racing* — proved to be optimistic. As with most Sega technology, Model 1 was basically an expensive assortment of bought-in chips. Its main CPU, an NEC V60 running at just 16MHz, was simply too slow for the Saturn. And the bulk of *Virtua Racing*'s number crunching was handled by four serial DSPs that were way too costly to be included in any home system. Sega's consequent development of the SH-2 meant that it could also produce a Saturn-compatible arcade system.

The development of the ST-V (Titan) board has provided Sega with a dual-purpose coin-op platform. First, it is intended as a low-cost arcade system, in direct contrast to expensive dedicated units like the Model 2-powered *Virtua Fighter 2*. It offers acceptable 3D performance but is primarily a powerful 2D engine, most suited to handling the latest fighters and sprite-based action games. Sega hopes that the low price will encourage its widespread use throughout



AM2's Yu Suzuki believes that Sega should follow Sony's approach to attracting third party developers

the arcade industry as a multipurpose arcade system.

But ST-V is also a testing ground for future Saturn games. The system is based on the Saturn chipset, with the main technical differences being the use of silicon instead of CD-ROM as a storage medium (the relationship between the two systems is similar to the one between the cartridge-based Neo-Geo and the Neo-Geo CD) and the capacity for upgraded graphics performance.

Sega currently has 10 games in the pipeline for the ST-V: AM2's *Golden Axe: The Duel*, and *Tantoaru*, a puzzle game from AML. But enthusiasm for ST-V within Sega isn't high. Says Yu Suzuki: "I think it will be hard to develop good software for the ST-V. It's not that I think the hardware is bad, but personally, I've got more interest in high-end machines. But because of the low price, ST-V will be Sega's new flagship hardware for the coin-op market."

Flagship or not, ST-V is emerging as the Hyundai of the coin-op market — affordable, yet unremarkable. It will be interesting to see how it fairs against Sega's Model 2 Ferraris.

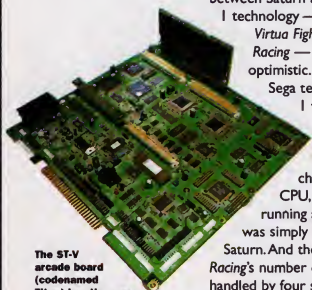
Given that Saturn's success hinges on the translation of games like *Virtua Fighter*, AM2 is the lynchpin of Sega's software policy. The work undertaken by Yu Suzuki and his AM2 team over the past six months has been as much a learning curve for the team as it will be for other Saturn developers.



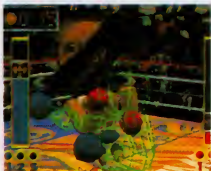
Sega's amusement division has played an important role in the development of the Saturn

"We couldn't port software from the Model 1 hardware to the Saturn," explains *Virtua Fighter* project leader Keishi Okayasu. "The V60 and the SH2 (SuperH) are entirely different chips. The original code needed a lot of work to make it run."

It seems that the biggest headache for the team has been coping with the twin central processors and maximizing the machine's power to display as many polygons as possible. Both SH-2 chips in the Saturn run at



The ST-V arcade board (codenamed Titan) has the same basic spec as Saturn but takes games on plug-in ROM cartridges for increased speed in the arcades



Sega's first Saturn-compatible ST-V titles include *Golden Axe: The Duel* (top) and *Virtua Fighter 2* (above)

28MHz (whereas in the 32X version they run at 23MHz). Although the combined capacity of both chips is 56 MIPS, they don't run in true parallel. The CPUs have a problem accessing main RAM at the same time — one chip has to wait for the other chip, and this slows down the overall performance quite considerably (although the problem can be minimized by using a RAM cache).

"Trying to program two CPUs has its problems," admits Yu Suzuki. "Virtua Fighter uses a different CPU for calculating each character. The two CPUs start at the same time but there's a delay when one has to wait for the other to catch up. One very fast central processor would be preferable. I don't think all programmers have the ability to program two CPUs — most can only get about one-and-a-half times the speed that you get from one SH-2. I think that only one in 100 programmers are good enough to get this kind of speed out of the Saturn."

Programming in assembly (the chip's own language) is the only way to get fast results. However, the Japanese traditionally use C, which leads to a significant drop in

performance. In assembly it's possible to achieve a two- to fivefold speed increase over C, and some developers hold C in such contempt that they maintain that assembly is actually more than 20 times faster.

Sega's in-house development of titles like *Virtua Fighter* has spearheaded the push to get the best results out of the Saturn. "In AM2 we use C for the first few steps and then assembly after that," says Yu Suzuki. "We managed to get the twin CPUs running at about 1.8 times the speed of a single chip — that would have been impossible in C."

The results, of course, speak for themselves: the Saturn *Virtua Fighter* is fast, smooth, and although the polygon count is lower than in the arcade, the conversion is faithful.

That's good news for Saturn. Sega's arcade pedigree is the machine's greatest asset. The fact that the entire initial batch of Saturns were prebooked by Japanese gamers can be directly attributed to the *Virtua Fighter* factor, and if Sega manages to convince more gamers that acquiring a Saturn means buying into an established coin-op hit factory, the machine could do very well indeed.

Ultimately, there are throngs of people who will stay loyal to Sega and keep confidence in the company's confirmed gameplay expertise despite any of the machine's perceived technical limits. Shiny Entertainment's Dave Perry is one such devotee: "I am a Sega man at heart," he says. "I'm behind Sega all the way. Sega makes the world's best arcade machines and is offering a way to bring them home. I placed my order a month ago..."

Now all us US gamers have to wait for Sega to announce Saturn's US launch. More news next month...



The jewel in Sega's crown (in the eyes of Japanese gamers, at least) is AM2's excellent conversion of *Virtua Fighter*

Release Schedule

(in Japan)

<i>Dead or Alive</i>	Sega
<i>Virtua Fighter</i> (\$90) (¥8800)	Shanor
<i>Mahjong Gaku</i> (\$56) (¥5800)	Time Warner Interactive
<i>Tama</i> (\$56) (¥5800)	Sega
<i>Wanchai Connection</i> (\$80) (¥7800)	Sega
<i>Chinese Detective</i>	Sega
<i>Goal Racer</i> (\$70) (¥6800)	Sega
<i>Clockwork Knight</i> (\$49) (¥4800)	Sega
<i>Gotha</i>	Sega
<i>Myst</i>	Sunsoft
February 1995	
<i>Great Wall Of China</i>	Sunsoft
<i>Gamesmaster</i>	Sunsoft
<i>Hissatsu Pachinko Collection</i>	Sunsoft
<i>Cotton 2</i>	Success
<i>Quo Vadis</i>	Gramus
<i>Zero Four Champ Special</i>	Media Ring
May 1995	
<i>Race Drivin'</i>	Time Warner Interactive
<i>New Legend Of Shinobi</i>	Sega
<i>Pebble Beach Golf Links</i>	Sega
<i>Greatest 9</i>	Sega
<i>Masters</i> (provisional title)	Sega
<i>Deadlus</i>	Sega
<i>Virtua Hang On</i>	Sega
<i>Rampo</i>	Sega
<i>Victory Goal</i>	Sega
<i>Van Battle</i>	Sega
<i>Dynamic Fantasy</i> (provisional title)	Sega
<i>Blue Seed</i>	Sega
<i>Magic Knight Ray Earth</i>	Sega
<i>Basketball Saturn</i> (provisional title)	Sega
<i>Daytona USA</i>	Sega
<i>Gail Racer</i> (provisional title)	Sega
<i>Virtua Tennis</i> (provisional title)	Sega
<i>Ice Hockey</i> (provisional title)	Sega
<i>Panzer Dragon</i>	Sega
<i>Tomcat Alley Saturn</i> (provisional title)	Sega
<i>Sim City 2000</i>	Sega
<i>Ecco The Dolphin Saturn</i> (provisional title)	Sega
<i>Fantasy Earth</i> (provisional title)	Sega
<i>League Road Saga</i> (provisional title)	Sega
<i>Side Pocket</i> (provisional title)	Sega
<i>Overdrive</i>	Zoom
<i>4D Boxing</i> (provisional title)	Victor
<i>Hardcore</i>	Virgin
<i>The 11th Hour/The 7th Guest</i>	Virgin



AM2's *Daytona USA* moves surprisingly smooth, despite being only 20-30% complete



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grasshoppers, tasty fleas and caterpillars.

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REVIVAL OF



THE FITTEST

Old games are back. Retrogaming is in. Increasingly inspired by the past, games developers are adding weight to the "they don't make 'em like they used to" argument. **NEXT Generation** gets back to its roots...



f course, plain old nostalgia is perennially flawed. When gazing — misty-eyed — back in time, it's easy to gloss over the mountain of

dreadful games that accompanied each, occasional classic. And now that the gaming industry has come of age, it's inevitable that different generations of gamers will have their favorite titles.

But there's more to it than nostalgia.

In 1994, the relentless pursuit of graphical excellence all too often leaves the game itself forgotten. A typical example is *Cosmic Carnage*, reviewed on page 93 — a wonderfully animated game, with all the playability of a pepperoni pizza. In the infancy of gaming, however, in the arcades of the late 1970s, no graphical flourishes could substitute for a lack of depth. As a result, many games were solid, inventive and quarter-crunchingly playable. Those that didn't offer a decent gameplay hook withered and died. And now, the technology-obsessed videogames industry — which has always looked toward the future — is returning to its roots.

The year is 1979. *Apocalypse Now*, *Alien*, and *The Empire Strikes Back* are packing them in at the local theater. Jimmy Carter is President of the US. And *Space Invaders* and *Pac-Man* are the future of interactive entertainment.

Fifteen years later, all these things are consigned to the history books. All, that is, except *Space Invaders* and *Pac-Man*. Games like these now form part of a games revival that has begun to make its presence felt on all gaming formats over the last year.

The pick of the born-again games is Jeff Minter's *Tempest 2000*. Released for the Jaguar to universal acclaim on April 12, 1994, *Tempest 2000* not only excited fans of the original but also won new adherents. It has since become the best-selling Jag cart by a wide margin, shifting one-and-a-half times more copies than its nearest rival.

Tempest 2000 is likely to be the first of many revamps on the Jaguar. "There are an awful lot of classic games that have been surpassed graphically but not in terms of gameplay," explains Atari's Darryl Still. "A lot of the games on the new formats are definitely lacking in gameplay."

Jeff Minter is already at work on a Jaguar version of *Defender*, and Atari has announced conversions of *Battlezone* and *Star Raiders*, both of which are being developed in-house with more classics promised. "We're making games for the millennium," soundbites Still, alluding to the '2000' suffix tagged onto all of Atari's recently revisited titles.

But it's not just the Jaguar that is exhuming the past. Taito Japan has released a faithful SNES conversion of the original *Space Invaders* — even reproducing the

retro gaming



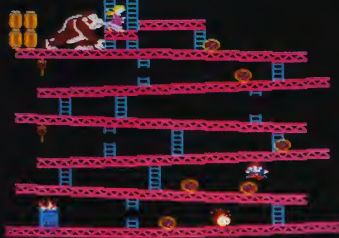
banding effect of the strips of plastic that 'colored' the ranks of Invaders on later editions of the coin-op cabinet. At almost half the price of normal SNES carts, it has notched up respectable sales in Japan.

And now Nintendo proudly presents *Super Punch-Out!!*, a SNES conversion of the 1982 coin-op. Activision presents a 90s' update of *Pitfall*. Tengen are dusting off *Race Drivin'* for a PlayStation appearance...

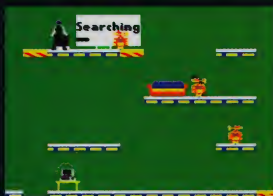
Even the PC is getting in on the act: The shareware programs VGASPEC and C64EMU are, respectively, Sinclair Spectrum (an 8bit home computer, very popular in Europe in the early 1980s) and Commodore 64 emulators that can run a large library of (illegal) versions of old Spectrum and C64 games, including *Manic Miner*, *Atic Atac*, *Paradroid* and *Pitstop*. The internet is heaving with shareware/public domain copies of classic 'inspired' games — and Microsoft has scored big with *Microsoft Arcade*, a collection of classic coin-op titles on one PC disk.

So why the sudden interest in old games? And what does it tell us about the games market today?

"Often people look at the graphics and sound and miss the fun elements of the game," reckons Janine Johnson of Activision, a company provenly happy to dust off its back catalog having released an FMV-intensive CD-ROM revival of the *Zork* series, consisting of the adventurous *Return To Zork*, and *Pitfall: The Mayan Adventure* — a new version of David Crane's pioneering platformer. (A new SNES incarnation of *River Raid* was also developed but cancelled after a poor reception at CES.) "The gameplay of the early games is really good and that's what we're looking to bring back," explains Johnson.



Donkey Kong (left) was not only Nintendo's first successful arcade machine (designed by Shigeru Miyamoto — read the exclusive interview on page 6) but is also the first game to be released for the Super Game Boy (right)



The C64's *Impossible Mission* (left) was a breakthrough platformer for home computers. Microprose's recent *Impossible Mission 2025* for the Amiga (right) is a pale imitation, unfortunately lacking the original's raw edge



Early games had very limited graphics, usually consisting of no more than a single screen's worth of tiny sprites on a blank background. There were no new levels, no bigger enemies, no cut-scenes; the rewards they offered were points and, of course, the pleasure of playing the game

graphically and conceptually, but it remains one of the most difficult games to play, let alone play well — and compared to the multimillion dollar productions of today, it was developed on a shoestring. *Defender*'s creator Eugene Jarvis: "Defender took about nine months to complete," he

explains. "In contrast to the 20-man *Cruis'n* USA crew, the *Defender* team consisted of just two guys — Sam Dicker, the guy who did the sounds and explosion effects, and me. I also did the character graphics which consisted of about 800-

900 strategically-placed pixels. *Cruis'n* USA uses 20 million texture-mapped pixels."

Asteroids was another game that was remarkably simple in concept, but demanded great skill from the player. Especially when the ship's thrust and inertia were brought into play. *Phoenix* and *Gallaxians* took the *Space Invader* concept and built on it. *Scramble* — the great grandfather of *Rebel Assault*, *Cyberia*, et al — offered gamers a greater choice of tactics, a greater range of risk/score playing styles and a more immediately rewarding pick-up-and-play 'feel' than almost any other space-shooting game since.

What do these old games have in common? They all offer players a rigid task (survival), a rigid set of tools to complete it (typically control of your ship and one or two weapons), meaningful rewards (points, extra lives and new levels) and then, and this is the Kryptonite, freedom to play the game exactly how you want. All of them:

- Let you play the game in your own style.
- Require a tactical choice between high risk and low reward.
- Offer meaningful rewards: extra lives and passage to hard-earned later levels.
- Are immediately pick-up-and-playable.
- Are essentially only a graphical vehicle for a test of player dexterity, reaction time and strategy — with no dues

There are a lot of classic games that have been surpassed graphically, but not in terms of gameplay

itself. It's this simplicity that appeals to today's gamers, whether they played the originals or not. The gameplay in these early games was defined by a number of basic parameters; within this framework the player was given complete freedom. The best of today's games rely on the same philosophy — *Doom* and *Street Fighter II* all use relatively few building blocks to create a comparatively open gaming environment, putting the emphasis on the player's actions rather than a preset series of events. The result is that they're not linear experiences — a complaint levelled at too many modern games.

And for all their lack of sophistication, early arcade games were remarkably challenging. *Defender* was extremely basic, both





The original *Pitfall!* (left) on the Atari 2600 VCS. The game went on to sell over seven million copies worldwide on different formats, a figure that the new *Pitfall!* (right) — recently released for the SNES — can only dream of



Not surprisingly, software companies are quick to refute allegations that they're just trying to make a fast buck. "It's been really expensive," claims Johnson. "*Return To Zork* cost (more than) \$2 million and it's not inexpensive to get Sound Deluxe Labs' (the Oscar-winning sound designers for *JFK* who produced *Pitfall!*'s sonics).

"The games still have to be developed from scratch, the same as any other one," argues Still. "We can't port code from the arcade machine into a Jaguar and just fill in the polygons. We had to start over." He strongly defends Atari's plan to continue raiding its back catalog of classic arcade and home games: "Atari's past glories are based on a very strong reputation for producing very good games. I don't think anybody can ever draw a line and say they'll never look back. We went back and learned from what we did (in the past)."

paid to storyline and no attempt made to be anything other than what they are.

- Never sacrifice a microdot of gameplay for the sake of graphics.
- Immediately react to player interaction, delivering rock-solid 'cause & effect'...
- ...which is consistent throughout the game, enabling players to learn strategy.
- Don't cheat. No sudden death for taking a wrong turn. If you lose a life — you only have yourself to blame. Run this check list past a selection of recent 'big' game releases, and you'll find that many fall woefully short.

Nik Wild, project manager at

Psygnosis, believes that "games based on reactions and dexterity will come back, but not until everyone's finished showing off all the things their new machines can do with FMV and sampled sound and CD storage."

There's also no disputing the fact that reviving a previously successful title makes sound commercial sense. If the game is a straight port across to a new format then all the work's done, creatively at least. And

if it's a product that has a strong track record, that's so much less work for the marketing department. "We sold seven million copies of *Pitfall* on all its formats," remembers Janine Johnson. She will no doubt be hoping that as many as a tenth of those who bought the original will fork out

Thousands of *Tempest 2000* players don't realize that the game they're playing is essentially ten years old

for Activision's new *Pitfall* game.

"There are six, eight years' worth of gamers who are discovering these games for the first time," says Atari's Still. "There are thousands of people playing *Tempest 2000* who don't realize that the game they're playing is essentially over 10 years old." Asked why Namco released new versions of *Pac-Man*, Namco's Kevin Yanagihara replies: "There's still a big demand for the *Pac-Man* game in the US and that's why we developed it for the NES and Game Boy. *Pac-Man* was released 15 years ago and some of the people who played it (then) are now 30 or 40 years old and have children. They'll buy it for their children and to play it again themselves."

More Cynical folk than **NEXT Generation** might say that the release of old games simply enables developers to avoid creating original products. "Isn't it just that people have got new formats to put old games on without more work?" suggests Wild.

In conclusion,

progress has undoubtedly been made over the years.


There's no arguing that many games designers in 1995 are more than an equal to those of 15 years ago: *Lemmings*, *Bomberman*, *SimCity*, *Populous*

are just four — randomly picked — testaments to the fact that supremely-talented game designers are alive and kicking. Technological advancements have also led to improvements on tried and trusted game formulas: The processing power behind racing games such as *Virtua Racing* and *Daytona* have enabled an unprecedented feel and depth (for example, a greatly increased range of angles at which to tackle a tight corner) to a game that started life as Atari's humble, early 80's release, *Pole Position*.

NEXT Generation also tips its hat to those games designers who have alternative goals in mind, be it Sierra's Roberta Williams (*King's Quest*) who maintains that her games are "primarily created to tell a story" or designers of simulations and pure strategy games. But for those developers who are looking to set the gaming world alight with an action game, may we suggest you take a wonder down to an old-fashioned arcade. The 'classic' games you'll find may offer little long-term enjoyment — they are, after all, designed for the arcade and hence to deliver quick, quarter-crunching thrills — but in terms of good old fashioned gameplay, they are yet to be bettered. And inspiration costs just 25¢ a go.



The Jeff Minter-programmed Jaguar game, *Tempest 2000*, proved what the purists already knew: Despite being 10 years old, *Tempest* is one of the most intense videogame experiences ever



If it were easy
anyone could do it

The background features a dense, overlapping collage of faded text in various fonts and sizes. Visible words include 'ISDN' at the top, 'MIDS' on the left, 'world wide web' in the middle, 'cyber space' below it, 'UNIX' at the bottom left, and 'MIF' at the bottom right. The overall aesthetic is reminiscent of early digital culture or a data stream.



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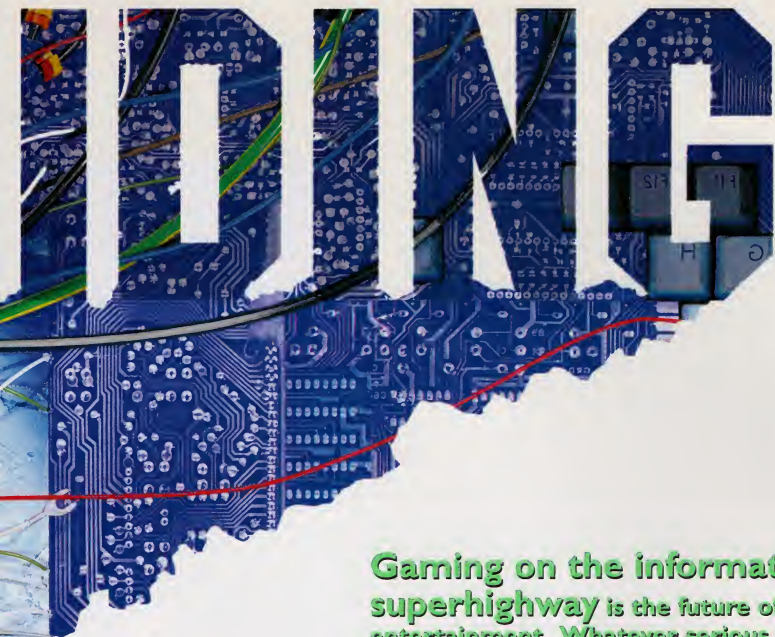
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ng on-line

JOYR



Gaming on the information superhighway is the future of interactive entertainment. Whatever serious applications are delivered to the home, games will inevitably thumb a ride. NEXT Generation reports



As long as the potential to play games exists, games will be played. Just as the most functional elastic band becomes ammunition in the occasional office skirmish, after hours office computers cease to run *Excel* and *Doom* is booted up.

The relationship between leisure and business computing is tight. The current boom of state-of-the-art games development enjoyed by PC owners is a direct consequence of the PC's widespread penetration into the home as a business machine. Gaming follows on the coattails of more sober applications. More proactively, the concept of the

'Trojan Horse,' by which a product is sold and marketed on one strength, with a view to the installed base enabling a hidden agenda is certainly not new. Trip Hawkins understands this, and makes no secret of the fact that despite 3D0's billing as a 1995 games machine, the real goal is to get computers into households which can then be used for wider applications.

"Once (a 3D0 unit) gets into a household, that's when the other people in the household discover that this isn't what they thought it was: it's not just something for Johnny to play games with, it's something that everyone can use," he explains. 3D0 owners take note.

ng on-line

XBand

Base Hardware: Sega Genesis (SNES available in spring)

Specialist Hardware: Modern-ROM cartridge, \$69.95

Medium: Telephone line
Producer: Catapult Entertainment, Cupertino CA
Contact: (415) 366-1735
In a nutshell: Links cartridge gamers for head-to-head challenges, provides a mail service to users, posts newsletters and monitors players' stats



In 1988, Hiroshi Yamauchi (president of Nintendo Corporate Limited) realized that with a NES in over a third of all Japanese households, he could turn a medium-sized toy company into a communications/media giant. The Nintendo network never realized its full potential, but at midnight on November 17, a California Company introduced a similar plan to the United States. Except that this time it is an enterprising third party — backed by Blockbuster Entertainment — who is cashing in on Sega's and Nintendo's massive installed base of game machines.

Catapult Entertainment manufactures a modern cartridge that plugs into a Sega Genesis machine. Later this year it will unveil a similar device for the SNES.

Sandwiched between the host console and a compatible games cartridge — so far *Mortal Kombat*, *Mortal Kombat 2*, *NBA Jam*, *John Madden Football '95* and *NHLPA Hockey '95* — the \$69.95 XBAND plugs into a standard telephone line and connects similarly equipped Genesis players across the country.

Here's what happens: Lonely gamers in need of some human competition turn on their XBAND-equipped Genesis, and the built-in modem automatically dials a local Compuserve number. Compuserve then transfers the call to Catapult



Bandwidth is the newsletter (featuring games hints, reviews and XBAND news) delivered to XBAND provides free of charge to all subscribers every week

Entertainment's server in Cupertino, CA and this is where the clever business begins.

"We're really a dating service," Catapult President Adam Grosser illuminates. "When a player signs on in search of an opponent, he is matched with a similarly-skilled player, in his local calling area (or long-distance, if he says it's OK) and the two of them are then patched together, automatically." Players are charged for this service, plus a monthly subscription fee. Included in the deal are electronic newsletters, the ability to X-mail (e-mail) other members

Upon signing up, one of your first tasks is to create an on-screen persona. This is how the rest of the XBAND world will see you, find out about your hobbies and interests



It's a two-way street. Gamers can easily be sold serious applications, and games will inevitably surface no matter what they are primarily used for. Heading toward the 21st century, the most lucrative potential 'use' of a computer is as a clearing station for the multitudes of information services that a link to the outside world will bring.

So, to the 'information superhighway.' While the word may be overused, misunderstood and generally misleading, what's certain is that our homes will be 'wired' in the future more than they are today. Whether by telephone line, coaxial cable, fiber-optic cable or some medium

entirely new (and in all probability, all four) households will increasingly be able to process large volumes of information from — and eventually back to — the outside world. This translates to movies on demand, yet more TV channels, tailor-made daily newspapers, video telephones, one million track juke boxes, home-office stock-broking... And inevitably, whether by accident or by design, gaming.

That gaming should take to the 'virtual' world of networking is a natural evolution. Games are software in the broadest sense; the cartridge, the floppy disk and the CD are simply outdated, clunky means of transporting data. Far better to broadcast (or more accurately,

narrowcast) games and cut the expensive business of manufacturing, boxing, shipping, storing and retailing from the game producers' equation.

Second, there are really only two types of games: those which tell a story and those which pit players mano-a-mano. An interactive games network provides an entire 'club' of opposition, of all skills, infinitely superior to even the best artificial intelligence.

The eventual goal has to be a VCR-styled box that accompanies your TV set and plugs into a fiber-optic/coaxial cable wall-socket. As well as a multitude of more practical services, this set-top box will be a killer games machine. It will: a)



Select a face, any face. In the future, XBand hopes it will be possible for scans of real pictures to be used in place of these mix 'n' match mug shots

and a complete stats update from XBand HQ.

XBand is an extremely impressive product. On the hardware side, some significant hurdles have been leaped. A new modem had to be developed for XBand's particular needs. "We're not interested in the volume of data the modem could handle," explains Catapult's Konstantin Othmer. "Just the time it takes for the data to

arrive." The amount of data being transmitted is very small — essentially just up, down, A, B game controls — but obviously it needs to be lightning fast for the game to play properly. Then, the modem has to effectively handle noise on the line, household dwellers picking up phone extensions in the middle of games and a multitude of other telephone hiccups. All this has been handled with apparent ease.



NBA Jam is one of the four-player games available to XBand players. The XBand server coordinates all worldwide contestants until a fairly-matched team is created, these players then play the game and their results are recorded for posterity

But it's the software and range of services that truly excels. Players devise their own personal profile and select a character icon to accompany their bio, they can 'taunt' their opponent before or after each match, a complete league table of gamers is constantly updated, there's a choice between playing a specific opponent at a specific time (a friend in the next town) or simply throwing your hat into the arena and taking on anyone. XBand offers as much of a club feel and environment as any MUD on the Internet. It's all very slick.

So far, the territories covered on a local phone service are Dallas, New York, Atlanta, Los Angeles and San Francisco. The network will become national to coincide with the launch of the SNES XBand in the spring. Inevitably, Catapult Entertainment will release further XBand products as other games systems hit mass market status. And if the number of



Available in the "spring" — to coincide with the XBand network launching nationally — the SNES adaptor will link Nintendo players across the country



The Genesis adaptor was the first to launch. A 32X adaptor is currently being developed, and Catapult Entertainment is currently investigating the possibility of developing modem adaptors for the next generation of 32bit and 64bit machines

participants snowballs as Catapult hopes they will, this could genuinely be just the start of something very, very big.



download the very latest software from Sega HQ (or wherever) on demand, in seconds; b) connect you to a global server that links gamers around the world; c) place you into a real-time multiplayer game (with players of your own choice, skill level, or any other personal preference), complete with personal profiles and video clips of your opponents; d) provide an involving, exciting and immersive gaming experience beyond anything seen today.

In early 1995, this dream is still a long way off — the technology simply doesn't exist yet. But people are working on it. On these pages NEXT Generation

profiles six operations, each pioneering network gaming in different directions (see the accompanying stories above). But the idea of gaming networks — and the spinoff businesses that could thrive

Once (a 3DO unit) gets into a household, that's when people discover it isn't what they thought it was

once the network was in place — is not new. There have been a couple of high-profile attempts at establishing a web based on games machines, and all (up until today) have failed to reach fruition.

In 1988, Hiroshi Yamauchi president

of Nintendo Corporate Limited (NCL) planned to capitalize on the huge penetration (over 35% of Japanese households) of NES units. From the outset, the NES had been designed with room for expansion. Even the first NES units on sale in 1983 had the technological capability to easily attach itself to a modem or a keyboard, and therefore link with the outside world.

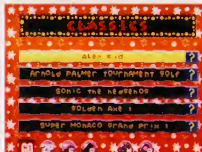
In 1988 Yamauchi announced the Family Computer Communications Network System (FCCNS) that could link NES units across Japan. All families had to purchase was a \$100 Communications Adaptor, and they could hook up. And, of course, with even a small percentage of

The Sega Channel

Base Hardware: Sega Genesis
Specialist Hardware: Cable-decoder/RAM Adaptor
Medium: Coaxial (Television) Cable
Producer: Sega, Time Warner, TCI
Contact: Your local cable provider
In a nutshell: A non-interactive cable TV service that delivers — to suitably-connected Genesis owners — a selection of 50 videogames, updated once a month



You won't find new games on The Sega Channel, but the occasional old classic makes for a welcome change of pace



It's just like HBO or Showtime, except that instead of TV shows, Genesis titles are piped into the home. The Sega Channel enables gamers to preview new games, 'download' their choice of game, and peruse the game tips and newsletters. It's basically just a new way of distributing software: simply press a remote control button instead of walking to a local video rental store.

For \$19.95 per month (the price of a premium TV channel) gamers can sign up and receive a set-top box. This box plugs into the Genesis and a standard cable TV socket and gamers will then be able to download games (it takes roughly a minute) into the set-top box's RAM and then play approximately 50 games per month.

Technically, there's nothing strictly revolutionary happening here. The amount of data in a 16bit videogame (typically just 1 or 2 MBs) is small compared to a TV or video signal. Therefore, the entire data of all 50 games



can be compressed into a 62 MB stream that is continuously transmitted, looping roughly every minute. It doesn't even need its own channel — the data stream is so small that while on trial, many cable companies managed to sandwich it between stations taking the place of cable FM radio trans-

What is Sega trying to achieve here? Is this the first brave step in a plan to take all software distribution out of the stores and onto the information superhighway? Or is this simply just a manipulative way to get gamers to pay to watch Sega's own commercials of its new and upcoming releases?

Sega isn't talking. Certainly there's no way that a dedicated gamer can survive by Sega Channel alone; the 50 games available are typically B-grade or golden-oldies — you won't find *Sonic* & *Knuckles* hanging here, at least not yet.. And it's unlikely



that Sega will ever settle for its cut of the \$19.95 per month that the Sega Channel charges in place of cartridge revenues. But with heavyweights such as Viacom, TCI and Time Warner as partners, Sega is playing with the big boys of communications, and can be expected to remain committed for the long term.

So does it offer a useful service? **NEXT Generation** has to conclude that yes, it does — but it could have offered much more. There's no true interaction here. There's no multiplayer gaming, no 'club' feel other than that orchestrated by the newsletter, and ultimately no real revolution in the way games are played. But The Sega Channel is the future of software distribution, and it can't be long before other companies follow suit.

NES users signed up, NCL would find itself controlling Japan's largest network of computers. An NCL Corporate Report stated "the FCCNS will link Nintendo households to create a communications network that provides users with new forms of recreation, and a new means of accessing information." The revenues that could then result from charging on-line time and taking commissions on all other transactions could be enormous.

Yamauchi urged his employees to think on a bigger scale than they had previously. "From now on, our purpose is not only to develop new and exciting software but to provide information that can efficiently be used in each

household," he entreated. "By employing the Nintendo Family Entertainment System as a domestic communications terminal, utilizing telephone lines, and the establishment of a large-scale network

The cartridge, the floppy disk and the CD are simply outdated, clunky means of transporting data

which to this point has been inconceivable, we plan to provide a vital supply of information for the domestic lifestyle in the fields of entertainment, finance, securities and health management, to mention but a few," it

was stated in Nintendo's 1989 annual report. "It is our important business target this year"

An alliance between Nintendo and Noura Securities Co. Ltd enabled FCNS customers to trade stocks and shares, the Super Mario Club was a networked "magazine" providing news and reviews of new games for distributors, soon postage stamps could be purchased online and betting on horse races was possible — all from a humble NES connected to a telephone line.

But despite some encouraging press coverage ("Soon you will be fighting for time on the Famicom with your children," warned a Japanese business magazine),

Nintendo Gateway

Base Hardware: None
Specialist Hardware: Complete TV/SNES/Multimedia server, dedicated network and terminals
Medium: Custom
Producer: Nintendo, Lodgenet Entertainment Corp, Hughes-Avicom International, Comsat Video Enterprises
Contact: Not yet available to the home, on board several airlines and available in thousands of hotels. In a nutshell: A localized network of interactive services (including games) to hotel rooms and airplanes

Having somewhat unsuccessfully dipped its toe in the network waters, Nintendo's latest plans for networked gaming is as part of a team developing local multimedia servers and stations for airplanes and hotel rooms. The Gateway System is essentially a multimedia provider: it delivers movies, SNES games, music and information on demand to hotel rooms or airplane seats.

Nintendo claims that over 40 million travelers experienced the Gateway System in its first 10 months since August 1993, enjoying a choice of ten SNES games, four to six movies, audio-CD play, telephone, shopping and informational services. Developed in Nintendo's Redmond, WA facilities, Gateway Systems can be found on board NorthWest Airlines, China Air and Virgin Atlantic flights, and over 10,000 Sheraton, Embassy Suites, Best Western, Clarion Plaza and Doubletree hotel rooms.

Yes, you're right, there's nothing here for gamers to really get excited about. Sure, now you can play SNES on an airplane — Game Boy's provided portable entertainment since its launch in 1989. But this is a

SNES-gaming mid-flight, a welcome alternative to watching *Home Alone* (again) and less risky than attempting to join the mile high club



bidirectional system (the Sega Channel isn't) and Nintendo doesn't shy from hinting at the potential of what its genuinely interactive Gateway System could grow into.

"The Nintendo Gateway System will make traveling more entertaining and informative in a thousand different ways, and there's nothing technological that limits Nintendo's systems for use exclusive to these areas," says Nintendo's Peter Main. "...today we are operating the same kind of interactive multimedia that other people are only talking about."

Into what could this closed-circuit system evolve? Russell Braun, Nintendo's manager of engineering, warns not to expect too much too early. "We're expanding Gateway into other specific environments with infrastructure that supports its capability, but the typical home right now doesn't have (the) high-speed, bidirectional connection needed," he

explains. "I don't see us entering the home for years."

The problem is that telephone lines are bidirectional (you can talk and hear) but they can't handle heavy volumes of data, and coaxial cable lines (such as TV cables) can handle huge amounts of data but it's a one-way street — you can't talk back to where the TV signal came from. Experts agree that a bidirectional flow of data at a minimum speed of 2 Mbits per second is needed before a Gateway-style system could be available in the home, and this technology — despite some spectacular advancements in telephone line technology made by British Telecom in the UK — requires a huge rewiring of American homes. No small undertaking.

But Nintendo is confident it will have the system and know-how in place when the technology arrives. **ng**

the sales figures of the Communications Adaptors were slow. By 1991 only 130,000 had been sold, a mere 15,000 to 20,000 users were utilizing the stock-brokerage facilities and the Super Mario Club was reaching only 3,000 businesses. Nintendo pinpointed several reasons for the network's lack of support. People didn't want their phone lines tied up for long periods of time, the NES was viewed primarily as a toy (not a 'sensible' medium for conducting banking matters), the services provided really offered no improvement over and above conventional methods and — perhaps most significantly — many kids wouldn't hand over the NES controllers to their parents.

"It is just a matter of time," Yamuchi maintained, but the Japanese NES-based FCCNS never garnered anything more than a lukewarm response from the public.

The US, however, offered a second. "For all its billions in sales, the computer revolution has reached only 15% of American homes" commented *Newsweek* in 1989. Nintendo, however, had reached over a third. "It seemed that we might as well take advantage of our position in the homes of America," mused Minoru Arakawa, president of Nintendo of America (NOA).

"Telephone communications play a bigger role in the United States than in

Japan" Arakawa had noted in 1988. The 'bigger role' would enable an easier adoption of Nintendo's proposed technology. A modem cartridge was introduced for the NES, and a hardware package including a low-cost printer and keyboard was developed. A greater emphasis was placed on entertainment, as opposed to business. Games could be downloaded onto a NES disk drive, an on-line tips service was set up and kids could send e-mail to pals across the country.

In 1991 Peter Main, NOA's VP of Marketing announced that "Development of the network continues on a very active program," but it would seem that behind the scenes there were problems.

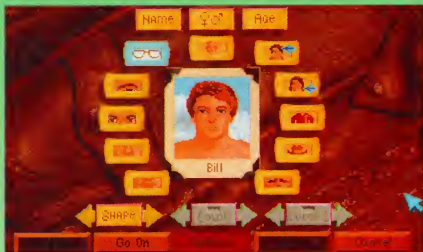
ng on-line

Imagination Network

Base Hardware: PC
Specialist Hardware: Modem
Medium: Telephone Line
Producer: Sierra, AT&T and General Atlantic Partners
Contact: (415) 548-2500
In a nutshell: A commercial games service on the Internet enabling PC players to partake in a wide variety of predominantly low tech multiplayer games

The Imagination Network is just one of a growing number of commercial games oriented on-line services. Founded in mid-1991 as the Sierra Network, the recently renamed Imagination Network now boasts over 45,000 members. All you need is a PC and a modem to sign up to a virtual world of gaming.

This is a truly interactive environment, with genuine multiplayer games and the chance to talk to other gamers. The telephone line connection restricts the amount of data flow, but with the majority of games relying purely on simple coordinate updates of simple references (chess moves, or casino bets, for example) latency is not a problem. Upon first signing up, new members create their



Creating your own profile is important — this is how the rest of the Imagination Network world will see you. Funny, everyone looks great...

own personal biography (including a mix-and-match picture of their face), indicate their strengths and weaknesses on any or all of the games available, and then join in the fun. A map of the Imagination Network's virtual town serves as a menu screen, from which any of the gaming forums can

be entered.

Games vary from board and card games played in the clubhouse (chess, bridge, backgammon), a 3D golf game, *Red Baron* (a four-player WWI dogfight simulator) and a casino full of poker, blackjack and roulette tables. Not surprisingly, some of the most popular games are the RPGs: two mammoth multiplayer environments named *The Shadow of Yserbius* and *The Fates of Twinion*.

All game stats are recorded for posterity — including the amount of cash you may have won or lost at the casino — and the Imagination Network's organizers are keen to stress



The 'Town Square,' your starting point and hub of the Imagination Network's varied services. Note the coliseum, the golf course and the casino...

Technological glitches were proving to be difficult hurdles, there were still doubts as to how much credibility a 'toy company' could command in the communications industry, and Nintendo has its hands full battling with Sega for 16bit superiority. So despite brief chances of an NES-based network being used in Minnesota to enable a statewide lottery, Nintendo of America's gaming network failed to ever reach proper fruition.

"The problem was one of finding a good enough application to make it worthwhile. And we never found one," concedes Russell Braun, Nintendo's manager of engineering. "Without this elusive blockbuster, a SNES or NES

network could never have good enough value to the consumer. People don't buy things just for the hardware, they need something to focus on to (use) it."

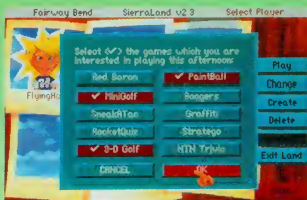
And for once, it would seem that Nintendo wasn't able to come up with the goods. Instead, Nintendo of America now promotes its gateway system (see page 57) and NCL in Japan is re-inventing the FCCNS as the SNES-based Message Information Broadcast System (MIBS) in which a 'Game Battle Service' enables gamers to play (*Super Mario Kart*, *Dragon Quest* and *Final Fantasy*) versus remote opponents and new game information is regularly downloaded to the home. Called 'St.

Giga,' this network doesn't seem (as yet) to be any more popular than Nintendo's last attempt at global domination of communications.

Another abortive project was AT&T's EDGE 16 modem for the Sega Genesis. Originally announced at the January Consumer Electronics Show (CES) in January 1993, AT&T's modem would enable Genesis players to telephone each other and simultaneously play a two-player game while (due to the incorporation of voice-band technology) talk with each other. In its original state, the EDGE 16 offered no forum for multiplayer interaction — you would



Idle chat, a more formal 'postal' service, the chance to throw down a gaming challenge — all are a click away



Sign yourself up for whatever particular games you fancy playing, then wait to be matched with a partner

the level of 'club' feel that is generated. Certainly the Bridge and Chess forums have regular players signing in from all over the country.

The level of interaction is superb. Messages between members fly back and forth, challenges are issued to both friends and strangers; this is as near to a country club cyberspace has to offer. What's missing? There are no third party games available here. Born of Sierra's idea to showcase its own games, there's no way you'll get to play Doom on The Imagination Network. Also, there's no denying that the service is expensive; with the RPGs requiring hundreds of hours of odres



play to fully explore, don't look here for a cheaper alternative for conventional over-the-counter purchases. But having said all this, **NEXT Generation** thoroughly

advises all with suitable hardware to check out The Imagination Network. But right now, this is the most complete gaming network on the entire market.

ng



Red Baron offers the most arcade-like action (above left); Othello (top) and checkers (above) games are played with people of equal ability

simply ring a friend with a similar game setup to play. But AT&T hoped to offer players more of a 'club' service at a later date. However, the system was beset by problems and on August 31, 1994, it was scrapped. "It didn't fit with the strategic redirection of our business unit," mysteriously offered an AT&T spokesman. The real problem was apathy from the software industry (only two games developers agreed to incorporate EDGE 16 compatibility), an unrealistic price point (\$150) and increasing pressure from Catapult Entertainment's superior XBAND system (see page 54).

These are two examples of network plans originating from within, or strictly

for, the business of playing games. There are others, however.

The Internet, for instance, has been steadily increasing in size and capability

It's hard to imagine that the entire Sega generation is ready to log on. (Nor, indeed, would they be entirely welcome.)

since its creation in 1969. Born from a small US Defense department, the Internet now spans the globe linking computers of all shapes and sizes. Games

enjoy a popular niche (see page 60), but, by and large, fall beyond the reach of the mainstream gamer. A PC, a modem and (most crucially) the pseudo-technical know-how needed to negotiate the daunting internet protocol is enough to put off all but the computer savvy; certainly it would be hard to imagine that the entire Sega generation is ready to log on. (Nor, indeed, would they be entirely welcome.)

Commercial services, such as Apple's E-World, America On-Line and the Imagination Network (see page 58) are increasingly focusing on games, but again, they lack the accessibility of mainstream gamers to truly blaze a trail.

ng on-line

Internet

Base Hardware: Personal computer (any flavor)
Specialist Hardware: Modem
Medium: Telephone Line
Producer: Various
Contact: Your local provider
In a nutshell: A hopelessly confusing, complicated — but blissfully varied — world of mixed-quality and — occasionally — genuinely interactive games

As long as there exists the potential to play games, games will be played, and the internet is the perfect example.


However, the internet is also a sprawling, cumbersome maze that offers plenty to those determined enough to master its arduous pathways — but a maze that (despite what the converted will tell you) remains inaccessible to all but the most committed.

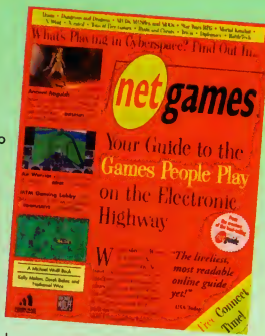
The excellent book *Net Games: Your Guide to the Games People Play on the Electronic Highway* literally lists thousands of ways to exploit the internet's infrastructure for leisure pursuits, including both commercial and amateur setups. Of course, the commercial setups make for the most graphically sophisticated games, but don't underestimate the levels of

grass roots internet support for the most simple MUDs (multi-user dungeons) and assorted low-tech gaming environments. What also exists is a thriving community of gamers who swap cheats, exchange gaming gossip and regularly check out the BBS of several software companies. Bug patches are commonly available, trial versions of upcoming releases and professional gaming advice often comes from the people who actually wrote the games.

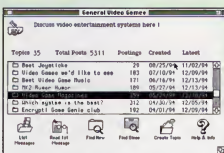
NEXT Generation hasn't the space to give the internet its justice here. We wouldn't advise internet novices to blindly sign on in the hope of discovering a whole new world of gaming —

it won't happen. Instead, we suggest players should dip their toes in the water by signing onto the *Imagination Network*, or a similar

commercial service: they are all very novice-friendly. If the internet beckons, you're free to make the leap into real cyberspace. 



There are plenty of internet gaming books available. *Net Games* is reviewed on page 32



Commercial services such as America On-Line (AOL) offer videogame bulletin boards, news groups and regular discussions

Realistically, it is most likely that the ultimate gaming network will eventually ride in on the coattails of some larger creation: It is the cable, telephone and communication giants that we should look toward to provide the first, truly global networks. Gaming systems (and alliances with Sega, Nintendo, Sony, etc.) will then adapt to whatever network is in place.

Analysis of the possible networks themselves is difficult. Complicated corporate coalitions, pending legal decisions, a plethora of competing systems, technical barriers, a profusion of conflicting compatibility standards and more hype than you can point a remote control unit at, all serve to cloud the issue

of exactly who's planning what. Let alone who's going to come out on top.

A compromise has to be made between utilizing existing technology,

The ultimate gaming network will eventually ride in on the coattails of some larger creation

cable and telephone lines (cheap, with lots of existing users but severely lacking in bandwidth), and starting for scratch with hugely expensive fiber-optic networks.

Working from what already is in place, Bell Atlantic in the US and British Telecom in the UK have recently

announced plans to utilize a breakthrough in telephone technology called ADSL (Asymmetric Digital Subscriber Line).

With the right circuitry, the frequency of telephone transmissions can be increased up to 6 MHz (6 Mbits per second) over distances of between 5 and 20 km. In bandwidth this equates to an MPEG (compressed video) signal plus a little extra room for a number of modem speed-back channels. To the man on the street, this means interaction with video. Which means TV and video on demand plus room for that extra magic ingredient... interaction. The potential exists for some awesome games — all on a standard telephone line.

3DO: Us West

Base Hardware: None
Specialist Hardware: 3DO-based, set-top terminal

Medium: Newly-installed, twin coaxial cable

Producer: US West, Time Warner, The 3DO Company, Scientific Atlantic
Contact: Not yet available to the public

In a nutshell: A nationwide network of interactive services (including games) following an ambitious 'overbuild' (start-from-scratch relaying) of bidirectional coaxial cables to homes with 3DO-based set-top boxes.



A 3DO player is the heart of US West's box.

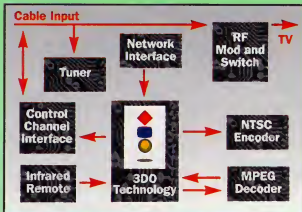
Currently on trial in Omaha, Nebraska, US West's Interactive

Television experiment is one of the most ambitious prototypes of 'the infobahn.' As opposed to adapting either existing hardware (such as XBAND's use of SNES and Genesis units) or an existing network (telephone lines), US West is doing this the hard way. The company is planning a brand new network and a brand new set-top box to process the volumes of information it will carry.

What this plan lacks in simplicity and ease-of-introduction, it more than makes up for in potential power. The network itself is based on twin, bidirectional coaxial cables to each household. Combined, these can handle 150 Mbits per second. That equates — when using 64 QAM, a clever modulation technique — to more than 1,000 channels of conventional television, or, in other words, the potential for some truly awesome network gaming.

"When US West started looking at this business, it realized that an entire overbuild (start-from-scratch replacement of the existing cable network) was needed and that this would be extremely expensive,"

The internal workings of US West's set-top box, and how 3DO fits into the picture. 3DO's open licensing policy made it the obvious pick of game systems



explains Rick Tompane, 3DO's vice president of technology. "If this venture was to make business sense, then some profitable functions of the proposed network needed to be identified and the most obvious place where people are willing to spend money is on video rental. Video-on-



Rick Tompane, 3DO's VP of Technology explains how 3DO and US West joined forces to create a network

demand (made possible by the huge number of channels) was recognized as the 'killer ap.' So a year ago all the hype surrounding the 'information superhighway' centered on the proposed 500 channels.

"Now, all this hype about videos on demand has died down. But a year ago, US West also realized that the next big interest is in interactive entertainment and looked at

how to provide fully interactive services like education, shopping and games."

Presently, there are no networked, multiplayer games. Instead, 3DO titles will be downloaded to subscribers' set-top boxes much in the same way The Sega Channel operates. But unlike The Sega Channel, US West's network is interactive, so why not take advantage of this and develop some killer multiplayer games?

"These are planned," reveals Tompane. "But not for the first phase. You don't want to inundate customers with new things they have to get to grips with. It's far easier to sell something that they already are familiar with, and during the trials we didn't want any confusion to cloud the analysis of what people do and do not want from the network. Instead, you roll out new features, such as multiplayer games, one service at a time once the network is in place."

So it's coming. Just don't expect it any day soon...

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Meanwhile, Microsoft has unveiled plans for an interactive TV operating system called Tiger, and Time Warner has impressed experts in the field after successfully conducting experiments in 4,000 Orlando households for its 'Full Service Network' — a new truly-interactive, cable-based system run from a set-top box manufactured by Scientific Atlanta, Toshiba and (most interestingly) Silicon Graphics Industries.

And, of course, every cable and telephone company in the land is planning its own system. Sooner or later, one will emerge as the clear leader in price, power and accessibility and games will become one of its features.

So will networked games-on-demand one day replace cartridges and CDs? The trend seems irreversible — it simply makes too much sense for it not to — but there are still some hurdles to overcome. Nintendo's Russell Braun explains: "Traditionally, a large amount of cartridges are sold as Christmas or birthday presents. People feel required to give something physical, and a paid subscription bill doesn't work as well as a wrapped box on Christmas morning." Also, once games hit the networks the perennial problem of software piracy is exacerbated — without the lockout chips found in Sega, Nintendo and Atari cartridges, all the code is vulnerable to

anyone with an ounce of technical know-how and a will to thrive.

And will multiplayer gaming networks revolutionize the way games are played? Maybe — and maybe not. There is a great deal of novelty appeal in locking horns with players thousands of miles away, but it's largely superficial. It will take a truly revolutionary multiplayer game to compete with a group of friends, a well-stocked refrigerator and *Super Bomberman 2*. But people are working on it. People with a great deal of resources and plenty at stake.

Until then, one thing is certain: Sitting down in front of the TV will never be as passive as it is today.



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Victory Goal **Saturn** Cybersled **PlayStation** Bioforce **PC** Clockwork Knight **Saturn** Super Street Fighter IIX **3DO** Absolute Zero **PC** Starblade **PlayStation** Road Rash 3 **Genesis** Tekken **PlayStation**

alphas

Games currently in development around the world

This month's "alphas" features 12 games currently in development around the world, for five independent hardware systems. While not representative of the entire gaming industry's multifaceted output, each offers a taste of what tomorrow's games will look like.

Check out "finals" on page 90 for reviews of finished games.

64 Cybersled **PLAYSTATION**

Namco takes a slice of two-player arcade action and serves it up on the PlayStation

67 Ultimate Parodius **PLAY...**

Konami's back-to-basics 2D blaster gives some 'retro-cred' to PlayStation's line up

68 Clockwork Knight **SATURN**

Another look at Sega's inventive new game character for Saturn's infancy

72 Bioforce **PC**

An 'interactive movie' (no, wait!!) that may actually come up with the gameplay goods

74 Absolute Zero **PC**

Take to the low-gravity skies of an Ice planet in this space-strategy shooter

76 Road Rash 3 **GENESIS**

You've played it before, and now EA is hoping that you'll want to play it again

78 Starblade α **PLAYSTATION**

The third of Namco's much-anticipated coin-op to PlayStation conversion

80 Raiden **PLAYSTATION**

Can the PlayStation re-create an arcade-perfect version of the coin-op original?

82 Tekken **PLAYSTATION**

Aka Rave War, Tekken is PlayStation's 3D fighter to rival Saturn's *Virtua Fighter*

84 Alone In The Dark 3 **PC**

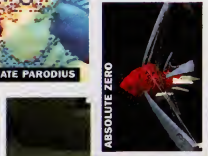
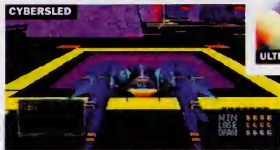
1-Motion's *Alone In The Dark* series reaches its long-awaited third installment

86 Super SF II X **3DO**

If only as a demonstration of 3DO's power, it's another crucial release for Trip & Co.

88 Victory Goal **SATURN**

Soccer gets another videogame outing, this time on the Saturn. But can it kick *FIFA*?



ng alphas

Cybersled

Namco's latterday *Battlezone* moves to the PlayStation, gaining a new two-player mode and texture-mapped graphics



Format: **PlayStation**

Publisher: **Namco**

Developer: **Namco**

Release date: **January 1995**

Size: **1 CD-ROM**

Origin: **Japan**



The standard viewpoint places you behind the sled (above). A missile hits its mark and finishes off a computer-controlled sled (top left)

Sony has already reaped the benefit of Namco's commitment to the PlayStation in the form of a conversion of *Ridge Racer*, which has been used to help kickstart the launch of the machine just a few weeks ago.

In addition, Namco intends to release a new PlayStation game every month after launch. January's release is a conversion of the superb *Cybersled* coin-op. A *Battlezone* for the '90s, *Cybersled* debuted in the arcades in September 1993 and, like Namco's other PlayStation conversion, *Starblade*, it was based on a version of Namco's aging System 21 'Polygonizer' board.

Cybersled is a simple game at heart. Armed with a meaty machine gun and a handful of guided missiles, you choose one of six different tanks, known as 'battlesleds,' and enter into a deadly tournament against other tank commanders. Once you're in the arena, it's a question of kill or be killed.

Weapon specifications dictate most of the battle tactics in *Cybersled*.



The texture-mapped tanks and buildings give PlayStation *Cybersled* something that the System 21 original couldn't handle

The heavy machine-gun is best in close combat: All you have to do is point it at your enemy and let it rip. The missiles are much subtler and give the game significant extra depth. You have to get a lock-on before you can launch one, but if the enemy is far enough away he can take evasive action to avoid it, or even take it out with one of his own missiles. Missile stocks are limited, and it takes between two and five hits to destroy a tank.

Crucial to *Cybersled*'s success in the arcades was a link-up feature. This capability will be incorporated into the PlayStation conversion as a split-



screen mode, with smaller onscreen shield, missile and radar gauges. Whether the PlayStation's link-up capacity will also be exploited by the game hasn't yet been announced.

Namco has introduced an additional two views for the one-player PlayStation game: one behind and above the battlesled and another in the cockpit. This is in addition to the traditional behind-the-tank arcade view. However, Namco has still not decided whether to include the coin-op's two-view zoom function in the splitscreen mode — the fear is that it could prove confusing.

But the most noticeable difference between the PlayStation



These screenshots (above) are from a 60%-complete version of *Cyberseid*. The various gauges may be smaller in the finished game

and the arcade game is, of course, the inclusion of texture mapping: Both the arena and all the vehicles take advantage of the machine's considerable power and are now resplendent with detail.

The effectiveness of the new splitscreen format is unproven, but as long as it manages to deliver the tense two-player action for which the *Cyberseid* coin-op was renowned, the PlayStation game looks like it is another feather in the caps of both Namco and Sony.



Each of the six different battlesleds in *Cyberseid* has individual ratings for speed, shields and weapons, which affect its performance. It takes between two and five missile hits or a well-aimed burst of gunfire to destroy a sled



The coin-op

First appearing in arcades in late '93, *Cyberseid* was the last game to use Namco's System 21 'Polygonizer'. This real-time 3D engine first powered Namco's *Winning Run* (a *Virtua Racing*-style F1 game) and was subsequently used in *Driver's Eyes*, *Starblade* and *Sobolou*.

System 21 has a 16-bit CPU but, with the help of digital signal processing and a custom graphics engine, it still manages to generate 1,000 flat-shaded polygons every 1/60 second. However, it's technically inferior to the PlayStation hardware, and its geometry engine is only 1/10 as powerful as Namco's more recent System 22 board, used in *Ridge Racer* and *Ace Driver*.

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Ultimate

The PlayStation's 3D abilities are beyond dispute. Konami's conversion of its classic blaster will test the machine's 2D talent

Parodius

Format: **PlayStation**

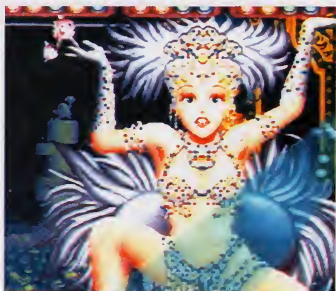
Publisher: **Konami**

Developer: **Konami**

Release date: **December**

Size: **1 CD-ROM**

Origin: **Japan**



The parallax graphics in *Ultimate Parodius* are a substantial improvement over those in the first coin-op. These hummers are just some of the obstacles to avoid



PlayStation *Ultimate Parodius* includes the entire original *Parodius* coin-op...



... as well as the new sequel (above). Unlike the SNES games, busy screens like these don't suffer from slowdown on the PlayStation

Few games illustrate the Japanese obsession with the bizarre better than *Parodius*. Starting life as a coin-op in 1990, Konami's superbly crafted parody of its classic *Nemesis* became one of the best shoot 'em ups on the PC Engine and SNES.

The PlayStation version is based on the more recent coin-op, *Gokujo* (or *Ultimate*) *Parodius*, and is being released shortly after a conversion for the SNES. Unlike the SNES game, though, the PlayStation version is subtitled 'Deluxe Pack' and includes not only an identical conversion of the latest game but also the original *Parodius* in its entirety. Both games are faithful to the arcade versions, from the sumptuous backgrounds to the range of superbly designed sprites.

Most PlayStation games so far have focused on the PlayStation's 3D technology. *Ultimate Parodius* will give it a chance to show off its 2D performance.

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ng alphas

Clockwork Knight

Format:	Saturn
Publisher:	Sega
Developer:	Sega
Release date:	Dec 9 (Japan)
Release size:	1 CD-ROM
Origin:	Japan

A new platform hero will accompany the launch of the Saturn in Japan. Sega's unlikely star is a tiny wind-up tin man called Pepperouchau, who features in the Saturn's flagship platformer, *Clockwork Knight*. Sega will be hoping that he proves as popular to the 32bit generation as the irrepressible Sonic was in the 16bit era.

Sega is developing new visual techniques for *Clockwork Knight* to make use of the Saturn's graphics capabilities. One of the most obvious innovative features of the game is its comprehensive use of 3D parallax scrolling. Instead of Pepperouchau marching past flat bitmaps (like in *Sonic*), everything he passes changes perspective according to his position.

As he walks toward an object, you see one side of it; as he moves on across the screen, the other side comes into view. This is given added impact by the

Now 90% complete, time for NEXT Generation's second look at Sega's highly-sprung new mascot for the Saturn



Clockwork Knight features amazing attention to detail and some gloriously rendered cut-scenes (above). All this for just ¥4800 (\$49)...

fact that every object in *Clockwork Knight* is exquisitely designed.

Clockwork Knight's graphics are the result of the Saturn's exemplary 2D ability – the hardware is essentially a sprite and background shifter. The



Unlike most platformers, *Clockwork Knight* has pseudo-3D backgrounds which scroll in convincing parallax. You have to jump across this oven flame (above)





By inserting a battery into this train (above) you can cover distances faster. Some of Pepperouchau's friends have turned against him (top)



A toy helicopter dive-bombs an exposed Pepperouchau (top). Chelsea, the kidnapped fairy princess (above), used to call the tunes in Toyland

One of the most innovative features of *Clockwork Knight* is its use of 3D parallax scrolling

textured 3D in *Clockwork Knight* isn't constructed out of true polygons, with every pixel assigned a depth coordinate. Instead, sprites are used. A 3D effect is created by defining flat geometric shapes on-screen which are tapered to create an impression of perspective. Sprites are then mapped onto them and distort as they scroll by. Because the shapes (such as building blocks with several facets visible, or a wall receding into the distance) are drawn to appear three-dimensional, the sprites mapped onto them also convey depth and solidity.

Pseudo-3D it may be, but the results are undeniably impressive — *Clockwork Knight* is an incredibly good-looking platformer with fantastic parallax scrolling. And the whole shebang moves at a fast 60fps.

To match these impressive 3D visuals, Sega has added some problem-solving elements to *Clockwork Knight's* gameplay. It has to be said that the puzzles aren't particularly challenging, but working them out still delivers satisfying rewards. For example, on one of the later levels you have to load a battery into a toy train. This done, you can leap aboard for a free ride as it chugs off through Toyland.



The characters in *Clockwork Knight*, being mere toys, are all dwarfed by everyday household objects

ng alphas

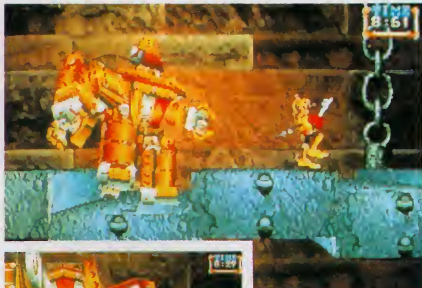
***Clockwork Knight* is an attempt to marry traditional platform gameplay with 32bit technology**



There are lots of hidden sections to discover in *Clockwork Knight* (above)

This proves very useful, as you have to cover a great deal of ground to get anywhere in *Clockwork Knight*. The object of the game is to rescue Pepperouchau's main squeeze, a music-box fairy named Chelsea. As is made clear in the wonderfully imaginative intro sequence and by means of cut-scenes throughout the game, Toyland will be destroyed if you don't rescue her. So Pepperouchau sets off to accomplish just this with the help of a few friends. His task isn't made any easier by the fact that many of Toyland's usually placid inhabitants have turned into rampaging fiends.

Clockwork Knight is an attempt to marry traditional platform gameplay with 32bit technology. The primary attraction is without doubt the beautifully designed characters and 3D backgrounds. However, it's debatable whether the level of challenge in the game will provide a sufficient draw. Then again, *Sonic* wasn't exactly overburdened with depth...



Bosses like this animated robot (above) move convincingly in 3D. Prerendered cut-scenes (below) move the story along effectively



The unusual-looking Pepperouchau, the 'clockwork knight' of the title (seen here in SGI-rendered form), is one of Sega's strongest character designs yet

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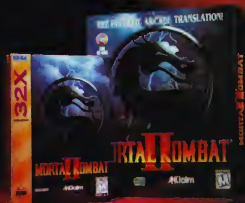
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ng alphas

Bioforge

Format:	PC CD-ROM
Publisher:	Origin
Developer:	Origin
Release date:	March
Size:	1 CD-ROM
Origin:	US

Origin finally puts the finishing touches on its first potentially groundbreaking action-adventure

You've got to feel for the *Bioforge* development team at Origin. It has been working feverishly for more than a year on the project, which the Texas-based company has slated as one of its first 'interactive movies' — but with everyone's gaze fixed firmly on the recent release of *Wing Commander III: Heart of the Tiger*, there has been little press devoted to this potentially groundbreaking action-adventure.

While most developers intent on creating 'interactive movies' utilize digitized video, Origin opts for rendered 3D graphics, focusing on cinematic techniques rather than flashy video technology. The use of multiple viewing perspectives switch automatically as you guide your character throughout

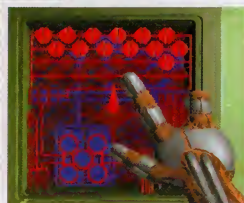


Multiple camera angles bring the disturbing images in *Bioforge* to vivid life

each scene, much as in *Alone in the Dark* parallels the use of multiple camera angles in films. Tense plot pacing, dramatic expository scenes, and a brooding soundtrack all add to the cinematic feel.

Bioforge casts you as an unnamed spaceship crewman whose craft has been boarded and most of its inhabitants slaughtered. As the game opens, Dane

Origin opts for rendered 3D graphics, focusing on cinematic techniques rather than flashy video technology



3D Studios was used to create several characters in *Bioforge*; this scene is particularly realistic (left). After escaping your cell, you face this logic puzzle. If you jot down the buttons you can push safely, you can overcome it through trial and error (right)



The use of multiple viewing perspectives switch automatically as you guide your character through each scene and, as in *Alone in the Dark*, parallels the use of multiple camera angles in films (above)



The planet on which you've been imprisoned is home to some of the very nasty life forms — made all the nastier by some cybernetic enhancements (top and above). You can pull off up to 16 offensive and defensive maneuvers. Our favorite? The headbutt, of course (circle)

awakens in a prison by earthquake tremors and discovers that his memory has been erased and his body cybernetically enhanced for combat. After escaping your cell, you must find a way to escape the 'hospital' facility before the base's damaged nuclear reactor reaches meltdown. As you pursue that goal, you'll pick up bits and pieces of information that slowly reveal your true identity, why you've been operated on, and the ultimate goals of your captors.

Though *BioForge* is similar in execution to *Alone in the Dark*, its characters and creatures — rendered in 3D Studio then animated with a body suit/software package called A

Flock of Birds — are much more convincing. And thanks to over a dozen offensive and defensive moves, combat is much more lifelike — your character can block and crouch, do roundhouse kicks, flatten opponents with a right cross, and more. And on a high-end machine (a P90 with 8MB of RAM and a 1MB PCI video card) you can expect somewhere between 30 and 40 frames of animation per second. That's impressive when you consider the size of the characters and the accurate scaling that's going on.

Look for *BioForge* to begin shipping near the latter half of February and only on CD-ROM, of course.

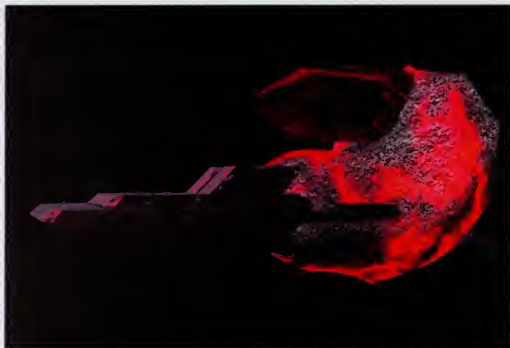


ng alphas

Absolute Zero

Domark attempts to push PC gaming forward by taking the crisp SGI images that make up so many intro screens and using them in a playable format

Format:	PC
Publisher:	Domark
Developer:	Domark
Release:	March
Size:	1 CD-ROM
Origin:	US



The SGI renderings of your crystalline antagonists are strikingly beautiful, their smoothly animated forms generating more awe than fear

Absolute Zero combines the increasingly familiar shine of SGI images with some impressive play animations and strategies

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sing a group of talented technicians and a couple of SGI workstations, Domark is pioneering what looks to be one of the most ambitious virtual environment games in some time. Its upcoming title *Absolute Zero* will shipped on CD-ROM only, and should first begin hitting shelves sometime in March.

In *Absolute Zero*, the company takes players to Jupiter's most mysterious moon, Europa, over 1,100 years in the

future. Populated by humans for its vast mineral resources, Jupiter's moon has become the home of three major space cities and over 200,000 human colonists. But now something has gone wrong (of course), and a spaceship whose size defies imagination has laid waste to the largest city on the planetoid. Now it's up to the players to refit their mining equipment into weaponry and keep this behemoth from razing all life on the moon.

More than just another space shoot-'em-up, *Absolute Zero* combines the increasingly familiar shine of SGI images with some impressive play animations and strategies. Carefully designed vehicles representing the best offensive technology with which the peaceful mining colony could come up enables players to sit behind the



Unprepared for a conflict of this magnitude, your miners need convert standard construction equipment into weapons and armor



An alien carrier shows off the combination of sharp and smooth surface design (top). These crystals may hold more secrets than their simple frames reveal (right inset). Originally a forklift, these newly armed, mobile weapon platforms are tougher than they look (center). Perhaps the most impressive of the aliens, this spinning leviathan boasts a stunning lattice-work of shimmering fibers (bottom)

controls of such diverse armament as light and heavy lasers, plasma pulse guns, and Gauss cannons locked onto makeshift carriers.

In each of the levels the players experience another aspect of the battle against the beautiful monstrosities, sometimes attacking from the ground, sometimes by air, while still enabling them to view the actions of the other allied craft involved in the assault. This is perhaps the game's most impressive feature, the ability to represent the all-out attack of a fleet of ships instead of the typical one-man vessel pitted against an entire army, a scenario we've seen for so long.

While Domark is loath to give out too many details about the nature of the mysterious attackers, players should expect to see all sorts of enemies constructed from biogeometries unlike anything they've ever experienced before. What's more, the player will have the choice to play missions from the invaders' point of view, and may discover the enemy that they've learned to despise in earlier levels is not as insanely murderous as they had initially believed.



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Road Rash 3

Format: **Genesis & Sega CD**

Publisher: **Electronic Arts**

Developer: **Electronic Arts**

Release date: **March**

Size: **16 Mbit & 1 CD-ROM**

Origin: **US**

EA's ultra-successful 16bit biking series benefits from 3D0 features and the cross-fertilization of the old and the new

EA's *Road Rash* saga now reaches its third Genesis installment, and while a third serving of the same dish would normally be enough to deter **NEXT Generation** reporters, *Road Rash 3* is one of the very few 16bit games to benefit from 32bit development. It's this cross-fertilization that will help ease the jump between 16bit and 32bit games, ensuring a smooth transition from old games to new.

Genesis *Road Rash 3* takes all the new biker animations and track layout from the highly successful 3D0 version, while the Sega CD version also includes the video footage and soundtrack. What this recycling



Racing in the ice and snow adds a new dimension to EA's tried 'n' trusted formula. There's also a new feature enabling players to customize bikes before each race — a perfect opportunity to invest in some snow tires

brings to the 16bit arena is — at least in theory — a constant flow of high-quality (even improving) games even when the majority of developers'



Destined to become a popular favorite, the cattle prod proves to be a shocking weapon



Police-abuse is a recurring theme in *Road Rash 3*, triggering amusing cut animations

Road Rash 3 takes all the new biker animations and track layout from the highly successful 3D0 version

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A&M music acts including Sound Garden and Swerve Driver contributed tracks to give the Sage CD version of Road Rash 3's soundtrack a tougher edge

attention is on the next generation systems.

Add some back-to-basics beefing up with such staple features as weapon selection — there are now five, including a cattle prod and nunchakus — new racing tracks (including Australia and England), a bike-enhancer mode (in which tweaking existing machines is a cheap alternative to buying an entire new bike), and EA is confident that *Road Rash 3* will help keep the Genesis burning bright well into 1995.



Don't try this at home kids. With new animation from the 3DO version, *Road Rash 3* on Genesis and Sega CD offers 16bit gamers a new sense of realism



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Starblade α

Format: **PlayStation**Publisher: **Namco**Developer: **Namco**Release date: **Feb 1995**Size: **1 CD-ROM**Origin: **Japan**

Starblade blazed a trail in the arcades in 1991. Four years later, Namco is aiming for similar success with the PlayStation conversion, *Starblade α* .

In late 1991 the coin-op that was the talk of the town in every arcade was Namco's *Starblade*, a shoot 'em up that broke new ground for arcade games with its stylish polygon visuals. To generate these stunning graphics, *Starblade* employed Namco's System 21 board, which was developed for the 1989 race game *Winning Run*, subsequently appeared in the *Xenious* sequel *Solvalou*, and was used more recently in *Cybersled* (page 64).

The *Starblade* coin-op relied on a LaserDisc to store its background graphics, dragging off the prerendered polygons as the player moved through the game. Only the enemies, constructed from around 1,000 polygons and displayed at 60fps, were generated in realtime. Texture mapping was absent but later made it into the backgrounds and some of the enemies in *Galaxian*.

Because of its use of polygons instead of sprites, *Starblade* was a tremendously influential game. Apparently, the Nintendo development team which worked with Argonaut on *Starfox* for the Nintendo used it for inspiration, copying some elements — like the music — uncomfortably close.

Namco cleverly disguised *Starblade α 's* linear gameplay and the

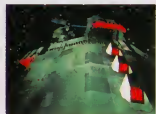


The texture-mapped graphics in *Starblade α* (top) look classier than the original filled polygons (above), and should help to compensate for the game's relative lack of interaction

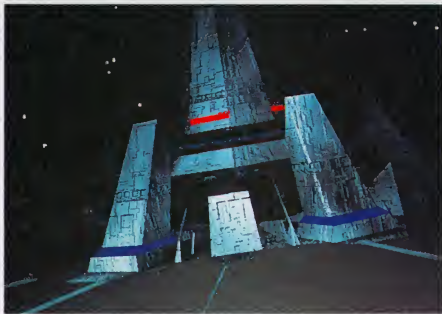
Although *Starblade* is still only 50% complete, Namco is confident that the game will be arcade perfect

player's lack of control over events by using a game screen that was larger than the actual screen. Although your ship flies on rails throughout the game, the fact that the screen scrolls left and right slightly when you move the joystick creates the impression that you've got limited directional control.

As a result of the restrictive environment, *Starblade α 's* gameplay is extremely basic. You control the crosshair gunsight of your ship and



Your Goesword fighter swoops in low over a gigantic alien battle cruiser (above and top)



All the background graphics in arcade *Starblade* were read off LaserDisc — only the enemies were generated in realtime. For *Starblade α*, it's likely that Namco will load precalculated geometry from the CD for a clearer display

have to pick off various targets — fighters, power sources and weapons on larger ships — as they queue up in front of you.

Both the story and the structure of *Starblade α* owe a great deal to *Star Wars*. Your home planet has been targeted by the Red Eye, a giant space station armed with a highly destructive wave cannon. As the elite pilot chosen by the Star Fleet Federation to fly the Geosword fighter, you have to attack the enemy fleet guarding the Red Eye, penetrate the space station and destroy its Octopus generator.

It's likely that Namco will employ the same technique to stream graphics off CD that Game Arts pioneered in the Sega CD blaster *Silpheed VR*. Instead

of relying on streamed video (which wouldn't match the coin-op's crisp LaserDisc visuals), *Starblade α* will probably load precalculated geometry off the CD, resulting in a much clearer picture. However, the inclusion of a texture-mapped mode could very well cause problems.

Although PlayStation *Starblade* *α* is only 50% complete, Namco is confident the game will be arcade perfect. Its pedigree gives it a head start, but the gameplay raises a fundamental question: Can a linear shoot 'em up designed for quick arcade thrills succeed with the gameplay-hungry and VFM-conscious home gamer? Time will tell, but if any game can manage it, it is *Starblade α*.



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All you control in *Starblade α* is the gunsight. The crosshair itself is the exact same in both the PlayStation, and the arcade version above, but the ships on which it's trained are all gloriously texture mapped (right)



Raiden

Format:	PlayStation
Publisher:	Seibu
Developer:	Seibu
Release date:	Jan (Japan)
Release size:	1 CD-ROM
Origin:	Japan



The intensity of *Raiden*'s graphics is unmatched on the arcade fighter circuit, so the PlayStation certainly has its work cut out for it

The scrolling shoot 'em up is one of the most rigidly defined genres in videogames. It is therefore not something you expect to see on a new console eager to show its polygon-handling credentials. So it's surprising that one of the first releases for the PlayStation is a conversion of the doyen of the uptight, no-messing vertically scrolling blasters, Seibu's *Raiden*. ('*Raiden*' is Japanese for thunderbolt, hence the *Mortal Kombat* character of the same name.)

Raiden was released in the arcades in June 1990, at a time when vertically scrolling blasters had already

Seibu's classic vertically scrolling arcade fighters, *Raiden* and *Raiden II*, get the PlayStation treatment



The PlayStation version of *Raiden* is a combination of both original coin-ops. The game handles 800-900 sprites simultaneously

been passé for many years. It's a testament to the sheer playability of the game — and the pull that pure shoot 'em ups still exert — that it was a huge success, both in Japan and overseas. *Raiden II* followed at the end of 1993 repeating the simple formula, with the added bonus of new weapons.

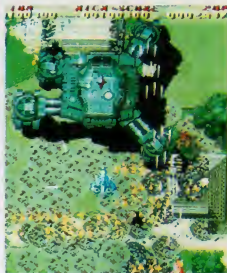
The PlayStation version of *Raiden*, provisionally titled *The Raiden Series*, is now about 70% complete, with three of the eight levels finished. According to Richard Honneywood, co-programmer with Kazutoshi Shoji, the

"The side-on mode has the exact coin-op graphics. There's just one point: You have to stand the monitor on its side to get the vertical-scrolling effect"

Tetsuya Kawaguchi, project manager



Like most CD consoles, the PlayStation drags graphics off the disc at intervals. Loading times are fast, though



Chipboard

The *Raiden II* PCB is a dedicated sprite shunter and therefore offers greater sprite handling performance than the PlayStation. Visible on the board are three large chips (see above), each of which takes on a different task. Chip A deals with collision detection; Chip B is responsible for sprite movement, and Chip C calculates vectors.

game is an amalgam of the both *Raiden* arcade titles.

"At first we tried to make a conversion of *Raiden II*," admits gaijin Honeywood, a recent American graduate of a Japanese programming university. "It wasn't until a few months later that we decided to include some *Raiden* stages in the conversion."

This is the first time that Seibu itself has handled a conversion of *Raiden*. "Some conversions have been done on other formats (SNES, PC Engine, Genesis, FM Towns) by other companies, but we weren't happy with them," says Honeywood. "They were OK but were far from the real arcade versions. We wanted a good conversion so we decided to do it ourselves."

Both *Raiden* coin-ops were played on tall, narrow screens. To reproduce this, the PlayStation game offers two different modes. One scrolls vertically but all the graphics are compressed to fit onscreen. The second mode scrolls sideways but is otherwise a perfect conversion. "It has the exact coin-op graphics, the exact same size, so it plays exactly the same way," claims project manager Tetsuya

Kawaguchi. "There's just one small point: With the side-on version you must stand your monitor on its side to get the same vertical-scrolling effect as the coin-op."

Even though there are radical differences between the custom coin-op arcade board and the PlayStation, the conversion process for *Raiden* has been relatively straightforward.

"The PlayStation is a polygon machine and we don't use many polygons in *Raiden*; we use sprites," explains Honeywood. "But in the PlayStation, the sprites and the polygons can be operated in the same way. We succeeded in managing sprites in almost the same way as polygons." And parallax scrolling? "It can do it but it's not the best hardware for it."

Despite *Raiden*'s graphic intensity, Seibu had no problems with the CD-ROM access time. "Sometimes we need more data for the bosses," explains Honeywood, "but we're trying to avoid (long) loading delays during the game."

It helps that *Raiden*'s music isn't competing with the graphics for CD-ROM access. Instead, Seibu is using the PlayStation soundchips — although it ventures that the machine could do with more sound memory.

Along with Konami's *Ultimate Parodius*, *Raiden* is the first real test of the PlayStation's bitmapping abilities. With *Raiden* offering 800 and 900 sprites on-screen as well as a palette of about 2,148 colors, it looks as if the machine will pass with graceful distinction. And that won't do Seibu's reputation with the purists any harm whatsoever.

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"Some conversions were done on other formats but they were far from the real arcade versions. We wanted a good conversion so we decided to do it ourselves"



Richard Honeywood, programmer



Raiden's most celebrated quality is the incredibly huge range of outrageous weapons at your disposal



You have to turn the monitor on its side to play PlayStation *Raiden*'s arcade mode

ng alphas

Tekken

Format: **Arcade**Publisher: **Namco**Developer: **Namco**Release: **Dec (arcade)**
March (PlayStation)Size: **1 CD-ROM**Origin: **Japan**

The first game to be developed for the PlayStation-based System 11 board jointly created by Sony and Namco is *Tekken*, which debuted recently at the JAMMA show and was also shown behind closed doors at the AMOA event (under the name *Rave War*). The game will eventually be ported to the PlayStation, but it's System 11 that Namco is currently pushing.

On the surface, *Tekken* (the title translates as 'Iron Fist') is a conventional — albeit impressive — *Virtua Fighter* clone. At the moment it lacks special moves, music and sound effects, but Namco stresses that the game is only 50% complete.

The game's eight characters, whose home turf includes St. Mark's Square in Venice, Fiji, the Acropolis in Athens and, curiously, Lake Windermere in the UK are all texture-mapped as well as Gouraud-shaded, and sport different clothes and logos in same-character matchups.

Unusually, the controls aren't the standard collection of hard and soft kicks. Instead, there's a single button for each hand and foot. In theory, this makes the fighting more instinctive and special moves much easier to learn. Like Takara's PlayStation fighter,

Toshinden, *Tekken* features a zooming camera which manages to keep both players onscreen.

Namco is reluctant to reveal any technical details about *Tekken* but is confident that the System 11 game and the home version will be virtually indistinguishable.

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Tekken is a perfect illustration of Sony's strategy to push its hardware into the arcade as well as the home



Tekken drew large crowds at the Amusement Machine Show, although *Virtua Fighter 2* packs more visual punch



Tekken's debt to *Virtua Fighter* is obvious (top). The texture-mapped visuals are superb and approach the quality of the graphics in Sega's sequel, *Virtua Fighter 2*. The System 11 arcade version will be released first

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Alone in the Dark 3



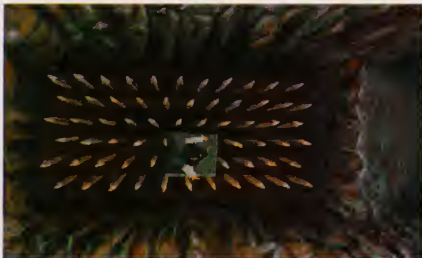
Getting stuck in jail is the least of your many worries (top). Try to keep your head away from the bad guy's guns (above)



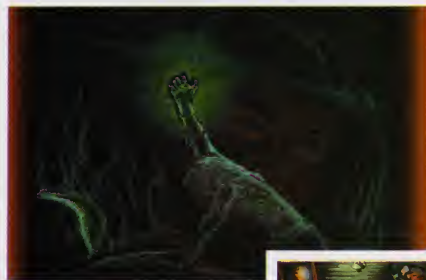
When you're out of ammo, it's time to break out one of Carnby's patented side kicks

Format: **PC**
 Publisher: **I•Motion**
 Developer: **Infogrames**
 Release: **March**
 Size: **1 CD-ROM**
 Origin: **France**

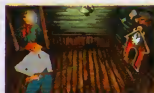
While publishers like Virgin and Merit try to catch up with titles like *7th Guest* and *Harvester*, the original master of the PC horror game, I•Motion is finding new ways to deliver creepy atmosphere and devilish puzzles within a 3D virtual landscape. After the surprising success of its original *Alone in the Dark*, which introduced gamers to a dark Lovecraftian world of ghosts, zombies, and demons from beyond, the company began to refine its already spectacular interface by adding more weaponry,



In *Alone in the Dark 3*, Carnby's new 'jump action' creates a new dimension to the gameplay without breaking it down into mindless hop, skip 'n' jump



Not one thing is overlooked in this subtle game. Even this painting has a hidden face



As usual, Carnby has a huge assortment of weaponry at his disposal (top). Even the dingiest of rooms is magnificent in its final form (above)

bigger worlds to explore, and new villains and storylines to uncover. The result of all this work was the larger, if not as frightening, *Alone in the Dark 2*, an epic battle in which Carnby finds himself confronted by the undead crew of an ancient pirate ship. Now, in its third and final game of the trilogy, developers Infogrames attempt to combine the effects of the two games into a huge thriller that will grip players with lengthy and challenging gameplay while maintaining a dark and foreboding feel throughout. *Alone in the Dark 3* places you in the American old west and in a tale that never made it to the big screen.

This time, Emily Hartwood, our heroine from the first adventure, finds herself in trouble while shooting "The Last Ranger" in a tumbleweed town called Slaughter Gulch. Now all contact with the film crew has mysteriously been severed, and the only surviving remnant is a note that makes the silent plea, "Call Carnby." On his arrival in the small town, Carnby finds that the problems (as usual) deal with



Slip up and you are treated to an animated sequence portraying your grizzly death



Tons of devious puzzles like this complex door mechanism break up the action sequences (top). Lots of detailed shots of the strange items within Slaughter Gulch complete the eerie atmosphere of the game (above)

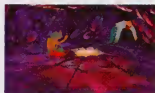
a gang of spirits from beyond the grave. Using all of his powers of mental and physical persuasion, Carnby must rescue Emily from the leader of these damned villains and remove the curse that haunts the town.

In addition to finding a pleasing balance of tone, *Alone 3* has made some nice jumps technically as well. Players will be given an unlimited number of backups this time, which is certain to please those dismayed by the meager offering of four slots in the earlier titles. The difficulty levels added allow gamers to configure variables like survival points and ammunition. All books in the game have been paired with actor's voices, and game animation routines have been sped up, sometimes reaching speeds of 94 frames per second. The game is even bigger than its last incarnation, and contains 270 different backgrounds, 60 animated characters, loads of full screen mininovies, and a full

soundtrack with original compositions. To help keep track of all the many details, players will also have access to a pop-up map.

Alone 3 is important not only as a wrap-up to one of the most innovative series in recent PC history, but also because it marks the opening of a new chapter in I•Motion's development. Details are still sketchy, but the early work looks phenomenal and is being developed by the same team who have made the last projects so successful. Dates for this new title (for now called *Alone 4*) are still up in the air, but inside sources point to a possible release in early 1996.

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With the aid of some native magic, Carnby can even escape death (top). The shamanistic sequences offer up some of the most impressive visuals in the entire game (right)



In panther form, running and fighting become much easier (inset). Pay attention to everything the old man says or does. He's got a much better idea of what's going on than you do (above)



Although there is a lot of work to be done, the player has got to take a little time out to play with your enjoyable, new feline form

ng alphas

Super Street Fighter II X

Format:	3D0
Publisher:	Panasonic
Developer:	Capcom
Release date:	Out now (Japan)
Release size:	1 CD-ROM
Origin:	Japan

Console conversions of Capcom's classic coin-op series are nothing new. But the 3D0 game could be the first one that can truthfully claim to be arcade perfect



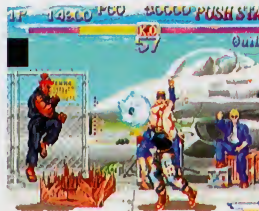
T.Hawk discovers that Ken's new Flaming Dragon Punch is a potent addition to his range of moves (above). Cammy flies backwards as Dee Jay slides (in left)



It seems ironic, considering that many 3D0 owners probably invested in the machine to escape the seemingly endless string of fighters on the SNES and Genesis, that one of the biggest titles for the 3D0 in early 1993 will be the latest game in the long-running Street Fighter II series, called (in Japan)



The coin-op's magnificent range of backgrounds, characters and moves has been transported wholesale to the 3DO. Every aspect of the game, from the number of colors to the level of detail, looks (to coin a phrase) arcade perfect.



All the coin-op's secrets are included in the 3DO version. Precise timing on the selection screen is needed for Akuma to make his long-awaited console debut.



Super Street Fighter II X: Grand Master Challenge (Super Street Fighter II Turbo in the US and UK).

Apparently after heavy pressure from Panasonic, which is itself feeling squeezed by the Saturn and PlayStation, Capcom put its recently formed Personal Computing Division — consisting of some of its most senior and respected programmers — in charge of the project. Its labors appear to have borne sweet fruit, as this looks like the finest *Street Fighter II* coin-op conversion as of yet.

The 3DO game's visual fidelity to the coin-op is extraordinary. The sprites are large, colorful and well proportioned, and seem to have retained all the detail of their coin-op counterparts. The backgrounds are equally impressive: Again, the level of detail is impossible to fault, and the movements of the onlookers at each location have been faithfully captured, providing a perfect setting for the foreground action. The game is now fullscreen, and the only noticeable deficiency is the lack of distant parallax scrolling. Q-sound CD music further enriches the atmosphere.



The arcade's stunning intro sequence is perfectly reproduced on the 3DO. Akuma and Ryu prepare for battle.



3DO *SSFII X* is the first console fighter released in the US to be a visual match for the Neo-Geo's gorgeous *Samurai Shodown*. But impressive though the graphics are, it's the game's new play mechanics that may prove to be its strongest selling point. With two-, three-, four- and five-hit combos available for all the characters, the emphasis is now on offensive style instead of attack/retreat tactics.

Each fighter now has an extra bar in the bottom left of the screen, which is charged up by performing certain moves. When it reaches maximum, the Super Combo becomes available, enabling the new, more powerful Shadow Combo to be accessed.

It looks likely that the 3DO *Super Street Fighter II X* will be an almost perfect replica of the coin-op version. But as to whether it will tempt players to actually buy the machine — given that the Saturn and PlayStation will soon be available in Japan for less than the 3DO's \$500 asking price — is less certain.



Cammy's Cannon Drill Shadow Combo (top). If a Shadow Combo succeeds, a sunburst (above) replaces the standard background.

ng alphas

Victory Goal

Sega's J-League soccer game may not play by the rules, but its graphical flair will certainly win fans

Fans of the Sensible Soccer school of play may find that Victory Goal errs on the side of instant appeal rather than long-term challenge

Format:	Sega Saturn
Publisher:	Sega
Developer:	Sega
Release date:	Dec 2 (Japan)
Size:	1 CD-ROM
Origin:	Japan

The Japanese enjoy an action-packed game of football even more than their European counterparts. There are therefore never any draws in the Japanese J-League: stalemated matches go to 30 minutes' extra time, and the first team to score emerges triumphant. The winning goal is called the 'v-goal,' or 'victory goal.'

Sega's namesake is officially authorised by the J-League and features 12 J-League teams, including such notables as JEF United, S-Pulse and A-S Flügels — Japanese soccer is nothing if not flamboyant.

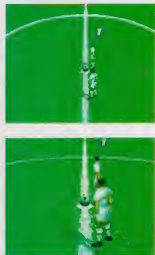
Using the now obligatory polygon technology, Sega has attempted to make *V-Goal* a TV-style experience. Nine different camera angles plus long- and short-range options mean you can select whatever viewpoint you deem appropriate: zoom in for close tackles; zoom out for long passes — all without affecting the flow of play.

V-Goal will no doubt be another graphic tour de force for the Saturn, but given the Japanese proclivity for arcade action and their disregard for anything approaching tactics, or even rules, fans of the *Sensible Soccer* school of play may find *Victory Goal* errs on the side of instant appeal rather than long-term challenge.

Victory Goal was one of the first Saturn games unveiled to the press and is now finally completed. Nevertheless, *Victory Goal's* release was delayed until a couple of weeks after the Saturn's Japanese debut and has yet to achieve spectacular sales.



The variety of camera angles and magnifications in *V-Goal* may make for splendid screenshots, but it adds little to playability. The blimp view (top) will probably end up as the standard viewpoint for normal play



V-Goal, like *FIFA Soccer*, features a zoom function, so you can observe your players at close range



CLUB DEAD

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Guardian War 3DO **Club Drive** **Jaguar** **Cosmic Carnage** **32X** **Kether** **CD-i** **Metaltech: Earthsiege** **PC**
Eternal Champions **Sega CD** **Mega Man X2** **SNES** **Sea Quest** **Genesis** **Rise of the Robots** **SNES**



Your essential reviews guide to this month's game releases...

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93	CD-i
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94	PC
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103	Arcade

NEXT Generation *finals* is a monthly listing of the gaming industry's output: the good, the bad and the plain ugly. For more detailed (well, bigger) reviews, we cordially point you in the direction of *GamePlayers* Sega Nintendo, *CD-ROM Today* or *PC Gamer*, specialist magazines for specific formats. But if a tight, concise, and (if you will) *pitiful* synopsis of a game's merits is what you're after, then look no further. Here's what the ratings signify...

******* Revolutionary**
 Brilliantly conceived and flawlessly executed; a new high-water mark.

****** Excellent**
 A high-quality and inventive new game. Either a step forward for an existing genre, or a successful attempt at creating a new one.

***** Good**
 A solid and competitive example of an established game style.

**** Average**
 Perhaps competent; certainly uninspired.

*** Bad**
 Crucially flawed in design or application.

3DO

Burning Soldier

Publisher: Panasonic
Developer: Genki/Pack-In Video
Size: 1 CD-ROM
Release Date: Available now

It seems the market is a little crowded with titles like *Burning Soldier* which is another shooter in the style of *Starblade* or *Rebel Assault*. You fly a series of four missions, against 'Kaisertian' aliens this time, and there is a two-player simultaneous mode (if you can talk someone else into playing). The graphics are fairly well done, and in its brain-dead, shoot-everything-that-moves way, it's not a bad game, but beyond that limited stimulus-response experience, there's not much gaming here.

Rating: ★★

Doctor Hauzer

Publisher: Panasonic
Developer: Riverhill Soft
Size: 1 CD-ROM
Release Date: Now (Japan)

Available in Japan, this bears more than a passing resemblance to *Alone in the Dark*. While not as atmospheric, challenging, or detailed, it still serves up a fair share of chills, outdoing the homegrown version. More camera views per room makes moving a lot easier, and one can shift the perspective to either an overhead view or a first-person view. The obstacles are more physical than



While not quite as good as its American cousin, *Doctor Hauzer*, an *Alone in the Dark* clone, still gives a run for the money

mental, although since nearly all the text is in Japanese, that's probably just as well for Western audiences. Certainly worth a look, if you can find it.

Rating: ★★★

Mad Dog II: The Lost Gold

Publisher: American Laser Games
Developer: American Laser Games
Size: 1 CD-ROM
Release Date: Available now

More light-gun madness from the folks at American Laser. There's not much to separate this game from its predecessor — it's identical in both look and game play — but since this is the sort of game you either like or you hate, that shouldn't bother anyone. Personally, we think the use of live video in a shooting game only serves to slow things down, but it does get you into the action better. American Laser claims that *Mad Dog II* ends with the longest interactive battle ever filmed, but after having played through a tedious half an hour, you'll probably wonder whether or not this is a good thing.

Rating: ★★

Microcosm

Publisher: T & E Soft
Developer: Pygnosis
Size: 1 CD-ROM
Release Date: Available now

Another shooter in the style of *Sewer Shark* or *Lodestar*, only this time the action takes place in a hapless scientist's bloodstream, rather than a sewer. There is little to recommend in *Microcosm* except a striking, even brilliant intro sequence that



Yet another in a growing number of shooters set in tubes or on track, *Microcosm* is every bit as bad as any of the others, and possibly even worse

deftly mixes 3D animation with live video. While the whole of the game looks nice, keeping up an undeniably fast pace, it becomes tedious after less than 10 minutes. This is one of those games one can never describe as challenging, only as frustrating.

Rating: ★★

Real Pinball

Publisher: Panasonic
Developer: Japan Dataworks
Size: 1 CD-ROM
Release Date: Available now

Real Pinball is an ironic title. It offers a choice of five increasingly complicated pinball machines, but the game's idea of 'real' is to tilt the machine back into a simple one-point perspective serving only to obscure the action, while the ball moves at an agonizing crawl. The game has a decidedly eastern look, and while that might have been cool, the colors and design are flat and dull, wiping out the 'cool' advantage altogether. There's been a recent surge in the number of pinball titles for PC and videogame systems lately, and while that's good news for some people we know, 3DO owners will have to wait a little bit longer for a 'real' pinball game to appear.

Rating: ★

Road & Track Presents: The Need for Speed

Publisher: Electronic Arts
Developer: Pioneer Productions
Size: 1 CD-ROM
Release Date: Available now

The Need For Speed offers 8 different cars including Porches, Corvettes, Ferraris, and other mouth-watering machines, 3 different roads to race on, and 3 different perspectives to view the action. The graphics look excellent, and the extras are plentiful (including specs for each car, and plenty of cops to zip by), but the actual feel of speed is sluggish. While the speedometer reads in excess of 100 mph, you don't feel the actual speed rush like you do in *Road*

Rash. It certainly could have used a fiery crash or two in addition. And, while everything is in place for a truly great game, the unfortunate and total need of speed prevents *The Need for Speed* from ever being more than a pleasant Sunday drive.

Rating: ★★

3DO

HOLLOW

Guardian War

Publisher: Panasonic
Developer: Micro Cabin
Size: 1 CD-ROM
Release Date: Available now

An RPG with rendered characters, *Guardian War* is a compilation of really cool and interesting parts that never mesh into a completely satisfying whole. There's a lot to like here: It's a big, Japanese-style game that features charming super-deformed characters like Samurai, Knight, Shaman, Birdman, Archer and Ninja, and wondrous to behold spell effects (the warm glow of the healing spell is particularly impressive). On the other hand, the world of *Guardian War* isn't exactly a wide-open place. There's a path, you have to follow it, and as you plod from set area to set area, you never get a sense of the storyline moving anywhere, or feel any urgency to get where you're going. While sitting there playing and watching the characters trundle around like animated poppies is a lot of fun, for the most part, the journey is the destination, and you wind up not caring much whether or not you finish.

Rating: ★★★

Fight on little guy! There's a lot to like about *Guardian War*, it just would have been nice to have it lead somewhere

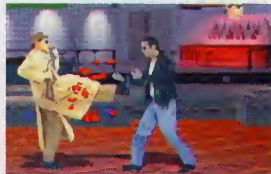


One of the coolest things about the game is the spell effects. An amazing display of light and sound, the effects are worth the price of admission by themselves (left). The game's only drawback is that one must follow a set path, and the story never goes anywhere particular (above)

SHADOW: War of Succession

Publisher: Tribeca Digital Studios
Developer: Tribeca Digital Studios
Size: 1 CD-ROM
Release Date: Available now

3DO now has two fighting games with digitized characters: *Way of the Warrior* and *SHADOW: War of Succession*. *Way of the Warrior* was a disappointment, but *SHADOW* makes that game look like a work of genius. With eight characters, including the usual ninjas and special forces rejects, it's hard to believe just how cheap they look. It's as if the actors just showed up wearing whatever they had in the closet at home on that particular day.



In *SHADOW*, it seems the producers didn't bother to hire real martial artists or acrobats and instead employed cheaply-dressed thugs

The control is butt-awful, and the fight animation must have all of two frames per move. Use the disc as a coaster for your coffee mug — you'll get more use out of it and enjoy it more.

Rating: ★

Shock Wave: Operation Jump Gate

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 1 CD-ROM
Release Date: Available now

Data disks have been common among PC games for some time. It would be cool if this were the start of a similar trend on other CD-ROM formats. *Operation Jump Gate* expands your original copy of *Shock Wave* giving you six new, difficult missions and a whole crop of even more dangerous alien enemies. On the run after the first title, you'll follow the would-be conquerors to their base on Mars. The follow-up isn't as complete as the original, but is twice as challenging. It's sure to be more than satisfying to the fans of the game.

Rating: ★★★

Tetsujin (Iron Man)

Publisher: Panasonic
Developer: Synergy, Inc.
Size: 1 CD-ROM
Release Date: Now (Japan)

Available from Japan, *Iron Man* is a first-person maze game similar to *Doom* and its many clones.

It moves OK compared to most titles of its ilk, and the impacts and explosions as you battle the enemy robots are handled with unusual pyrotechnic flair. But the game's real hooks are the odd, psychedelic visuals surrounding the action. Even if you can't understand the almost inaudible Japanese dialogue, you'll certainly appreciate the dreamlike quality of the whole thing. Not better than the rest, just different.

Rating: ★★

True Golf Classics: Waialae Country Club

Publisher: Panasonic
Developer: T&E Soft
Size: 1 CD-ROM
Release Date: Available now

The *True Golf* series — of which this is the first to make it this

side of the Pacific — duplicates the holes and conditions of some of the most famous golf courses in the world. Whether this is really like being at Waialae, Hawaii, we're not qualified to say, but once you're accustomed to the testy swing mechanics and longish CD access times, this golf game plays extremely well.



Waialae is so close to real golf, you even get your own caddy — except, of course, you're not expected to tip them anything

Along with options for tournament, stroke, skins, and match play, the game enables the player to challenge as many as four human or computer opponents. *Waialae* is all the more enjoyable for enabling you to sport eighteen holes without having to wear stupid pants and talk merger deals.

Rating: ★★★

rating jaguar

Ultraman

Publisher: Bandai Japan
Developer: Bandai Japan
Size: 1 CD-ROM
Release Date: Now (Japan)

Another title available from Japan, *Ultraman* is based on the new TV series (which also plays in some syndicated US markets). A fighting game similar to the SNES title released in the US a couple of years ago, the player — Ultraman — battles a series of giant rubbery monsters. 3DO adds video clips from the show, includes a new "VTOL Attack Mode," in which you dive bomb one of the critters with a jet before getting it on hand to hand. It's fun in a goofy sort of way, but the action is way too slow for serious fighting game addicts.
Rating: ★★

VR Stalker

Publisher: American Laser Games
Developer: Morphous
Size: 1 CD-ROM
Release Date: Available now

While the PC world is crammed with flight simulations, sims have never made a dent in the underpowered world of home systems. *VR Stalker* would like to fix that, but while it flies smoothly, quirks like a targeting system that locks onto the nearest enemy and can't track dangerous ground targets like AA guns and tanks make the game frustrating. Also, your



While it looks like a flight simulation, and it almost fills like a flight sim, if you treat *VR Stalker* like an action game instead of a flight game, you're likely to enjoy its thrilling action

high-powered jet — an F-14, F-16 or an A-10 — also can barely outrun a chopper. But if it falls short as a sim, it's a thrilling action title. A mild disappointment, but not if you are looking for fast action.
Rating: ★★

Jaguar

Checked Flag

Publisher: Atari
Developer: Rebellion
Size: 4 MBs
Release Date: Available now

While a feeling of speed is of paramount importance in any good racing game (see the 3DO review of *Need for Speed*), *Checked Flag*'s frustrating blend of celerity without control ensures many hours of frustrating gameplay. The player essentially careers off every wall with all of



Coming to a near stop in *Checked Flag* is often the only way to drive around these treacherous curves

the handling expected from Wily Coyote on roller skates. There are plenty of good game features here (choice of tracks; sunny, wet, and foggy weather conditions, and wheel balances), but most players will find that the real challenge is in just hanging on for the ride. Racing enthusiasts need not apply.
Rating: ★★

Dragon

Publisher: Atari
Developer: Virgin
Size: 4 MBs
Release Date: Available now

Aside from *The Crow*, *Dragon* was probably this year's most obvious choice for a film conversion. That Virgin ended up with is an odd fighting game including great background graphics, an interesting storyline and a fair amount of gameplay options. Plenty of special moves and the new addition of a 'grace' bar give the game a feeling that is uniquely its own. Dual

two-player modes allow for competitive play (two Bruces slug it out in a pit) or cooperative play (where Bruce and his long lost twin team up on villains from the movie). Nothing truly amazing, but still good fun.
Rating: ★★

Iron Soldier

Publisher: Atari
Developer: Eclipse
Size: 4 MBs
Release Date: Available now

Take the controls of an immense killing machine in Atari's new action cart *Iron Soldier*. In 16 increasingly difficult missions, the player will stomp around virtual landscapes destroying every single thing that lays in his path while collecting hidden

caches of ammunition, 'repairs,' and best of all, new weaponry. In discovering more technology, there is a choice as to what equipment — from a list to include grenades, assault rifles and even remote-controlled missiles — to carry on each new mission. When you're out of guns, enjoy the pure Godzilla-like effect of stomping on enemy tanks and punching helicopters out of the air. *Iron Soldier* is just plain, good old-fashioned destruction.
Rating: ★★★

Jaguar

WRECKAGE

Club Drive

Publisher: Atari
Developer: Atari
Size: 4 MBs
Release Date: Available now

Imagine driving around a junkyard in a clown car while suffering bouts of blindness and you'll have a good idea of what to expect from *Club Drive*. Designed as a *Hard Drivin'* clone, almost every aspect of the game that would have been entertaining is destroyed by the title's sluggish response, annoying physics (you'll spend as much time barrel rolling as you do driving), and tepid gameplay (drive to point A and then get back to point B or pick up little balls, it's all up to you). Players can choose between driving in San Francisco (made up of huge, jumpy brownish blocks), Velocity Park (huge, jumpy bright blocks), the Old West (brownish blocks again), or Jerome's Pad (bonus level, you get a mixture of both brown and bright blocks). In two-player mode, the already frustrating gameplay is reduced to pure silliness as both drivers attempt to make sense out of the squished and distorted flashes on the screen in front of them. The Jaguar has made good progress developing innovative new titles lately, but this is one title to be avoided at all costs.
Rating: ★

Probably the best world of the lot, *Jerome's House* even has a toilet that makes flushing noises... Wheeee... (circle)



In the tiny two-player mode, it's almost impossible to even figure out what you're looking at (below)



Any time players get close to a wall, depth perception, and in many cases, general sight go out the proverbial window (left)

32X

FLOTSAM

Cosmic Carnage

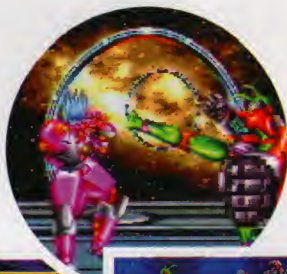
Publisher: Sega
Developer: Sega
Size: 24 Mbits
Release Date: Available now

Here's the plot: Two huge space ships collide in space, leaving two four-man crews — evil aliens and humanoid good guys — to duke it out for the last intact escape pod in the drifting hulk. The ensuing demonstration of just how little 32bit processing brings to an ill-conceived party will sadden the heart of 32X's staunchest supporters. Optimists will weakly point out that perhaps the combat moves do, in fact, accurately reflect the concussed, feeble tottering of 5,000 mph space-wreck survivors. The cynical will make the analogy between the gameplay-free upshot of two colliding space ships and the ill-designed marriage of the Genesis and 32X unit themselves.

But not *NEXT Generation*, of course. Objectively, we point to the abysmal graphics, the shocking neglect of audio, criminal presence of slowdown and blatant "showing off" (the game's camera jerks in and out while the occasional limb scales out 'toward' the player) at the expense of gameplay. And despite a tip o' the hat to the novelish inclusion of pregame armor selection, we conclude that *Cosmic Carnage* stinks.

A sad, shambling mockery of a fighting game.

Rating: ★



Dig it. Player one wrong-foots player two with an impromptu Shirley Temple tap number (left); You could almost be there. 32X offers hardware scaling, here used to full effect as player two's fist is enlarged (top); Eight players fight it out of the last remaining escape pod on the crippled space hulk (above)

32X

Super Afterburner

Publisher: Sega
Developer: Sega
Size: 24 Mbits
Release Date: January

Sega's arcade heritage not only provides its developers with a healthy pedigree and sense of history, but with the occasional no-brainer.

Here we have Sega's arcade classic, *Afterburner*, as we all remember it. The 1991 Genesis release of *Afterburner 2* failed to deliver the gameplay goods to accompany its impressive (at the time) graphics, but now the 32X brings all that coin-op goodness home.

Trouble is, of course, "arcade

perfect" is a mixed blessing. Bundled in with the pick-up-and-play accessibility — instantly-rewarding "feel" and finely-honed gameplay — comes a lack of depth born from *Afterburner*'s need to keep arcade quarters quickly pumping in its slots. No one ever intended this game to offer long-term value. But for a taste of nostalgia, *Afterburner* comes up with the (albeit ludicrously overpriced) goods.

Rating: ★★★



Super Afterburner, Sega's attempt to inject 32X's catalog with some much-needed arcade credibility. But do gamers in 1995 remember the original?

Super Space Harrier

Publisher: Sega
Developer: Sega
Size: 24 Mbits
Release Date: January

Everything said about *Super Afterburner* equally applies to *Super Space Harrier*. One of the first games to feature a moving hydraulic cabinet, *Space Harrier*'s charm is founded on 3D shooting action in a freaky, alien world. Now, minus the moving cabinet and the "wow" factor that came with *Space Harrier*'s state-of-the-art status at its debut, the 32X production of Sega's coin-op gives gamers a chance to bring the arcade into their living rooms.

Again, there's no real long-term gaming to be found here, other than the twin hooks of nostalgia and a chance to see those levels you were never skillful or rich enough to reach on the coin-op. But there is a decent, solid game underneath the gloss. *NEXT Generation* advises rent, don't buy.

Rating: ★★★

CD-i

Alien Gate

Publisher: Phillips
Developer: SPC Vision
Size: 1 CD-ROM
Release Date: Available now

A completely mindless attempt at a shooting title. Substandard graphics, appallingly easy gameplay and sluggish control blend into a title tedious at its very best. Most levels play like the Nintendo version of *Legendary Wings* without cool power-ups or enemies, while some levels take gaming even further into the Ice age of Atari's *Centipede*. While the music is OK, repetitive sound effects do more to distract the player from the screen than they do to enhance gameplay. Those who actually want shooting action from their CD-i will do better to stick with games like *Mystic Midway* than to delve into this painfully deficient travesty.

Rating: ★

rating neo-geo cd-i

CD-i

PUZZLING

Kether

Publisher: Philips
Developer: Infogrames
Size: 1 CD-ROM
Release Date: Available now

A very strange mixture of an action and graphic adventure, *Kether* oscillates between frustrating and fun with annoying regularity. As you'd expect from Infogrames (the French company that brought us *Alone in the Dark*), the game looks fantastic, includes stunning animation and brilliant backdrops. Gameplay changes up every few minutes, so if you dislike a level — like flying through the asteroid belts for instance — it won't be long before something better comes along. Challenging puzzles and a mystical atmosphere round out the title into a CD-i adventure that's a cut above many of its peers.

Rating: ★★★



Puzzles don't often come with a lot of explanation, and figuring out what to do in the first place is half of the game



These mazes contain parts of a puzzle that will unlock an even greater mystery. Keep an eye out for annoying demon interference (circle); The asteroid sequence is a lot like playing the 3D version of the Atari classic *Asteroids* without any weaponry. Yawn (above)

Dragon's Lair

Publisher: Philips
Developer: Super Home Club
Entertainment
Size: 1 CD-ROM
Release Date: Available now

While most die-hard gamers will cringe at the thought of playing through this quarter-muncher again, newcomers to the gaming arena may find the 80's hit to be a valuable addition to their library. With the aid of the Digital Video Cartridge, Philips has put out one of the most arcade-perfect conversions of all time. The push-and-watch control method works well with CD-i's remote, and the sound effects

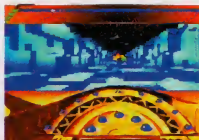
and music are once again arcade-perfect. People who liked the stand-up version or enjoyed any of Don Bluth's other titles (*Space Ace*, *Dragon's Lair II*) will be in heaven, otherwise it's probably best avoided.

Rating: ★★

Inca

Publisher: Coktel Vision
Developer: Coktel Vision
Size: 1 CD-ROM
Release Date: Available now

A run-of-the-mill graphic adventure for the PC makes a somewhat painful conversion to the CD-i. As a spirit you attempt



These shoot-'em-up screens take an exciting premise and turn it into a tedious drill in *Inca*

to fulfill the prophecy of El Dorado by freeing his body from a rocky grave and rekindling the old power of the Incas. This unique storyline is coupled with ho-hum action sequences leading the player through starship battles, laser fights and more without ever becoming very interesting. This, along with crippling CD-ROM access times and unconvincing voice acting keep players from ever really being pulled into the story at all.

Rating: ★

NEO-GEO

No new Neo-Geo videogames were released this month.

PC

Armored Fist

Publisher: Novalogic
Developer: Novalogic
Size: 1 CD-ROM
Release Date: Available now

The title that all wargaming fanatics have been waiting for, Novalogic's deep new simulation/strategy epic *Armored Fist* is not only a graphically intensive tank sim, but also functions as an equally impressive campaign-based "boardgame." Designed for realism, Novalogic uses technically accurate representations of both US and Soviet armored forces based, in part, on information provided by actual tank personnel. Ground detail is similar to the company's *Comanche* series and includes new options for artillery bombardments and air strikes. Fierce explosions and other amazingly sharp special effects — down to the interference on the night scopes — complete the experience. Charming cold war fun.

Rating: ★★★★★

Ishar 3

Publisher: Readysoft
Developer: Silaris
Size: 8 MBs
Release Date: Available now

Reminiscent of hundreds of low-budget RPG's produced for the Commodore 64 during its golden age, *Ishar 3* is really something of a dinosaur. The standard fantasy plot (evil wizard does evil things and you've got to stop him) is presented with an annoying interface which is apparently designed to assure players they will get pounded with graphics that would have been substandard three years ago (flat character images pasted on drawn backgrounds). Even with its failings, the game's depth — 40 different spells, over 100 different personality types, and sprawling maps — and complexity does give it a certain golden age charm. This is *Bard's Tale* all over again.

Rating: ★★

Lost Eden

Publisher: Virgin
Developer: Cryo
Size: 1 CD-ROM
Release Date: Available now

A strangely pleasing approach to the classic graphic adventure, Cryo's *Lost Eden* combines the crisp otherworldly look of *Myst* with the puzzles and dialogue of Sierra's classic *Quest* series. A unique storyline — developed, in part, by fantasy writer Steve Jackson — takes players through a struggle that will force mankind to team up with evolved dinosaurs and simians. Over two years in the making, the game



If these mean carnivores rule the primitive land in *Lost Eden*, normal happy dinosaurs are in for some hard times

contains hours of excellent voice acting that perfectly complements the smooth 3D Studio rendered animations creating a remarkably believable atmosphere. Although it won't provide much of a challenge for experienced players, *Lost Eden* is a great title for anyone who loves a good story.

Rating: ★★★

PC

When you've got the nerve, a somewhat sarcastic commander will let you loose on the enemy. Don't screw up (right)

This will be a standard patrol mission. What the assigned way points and destroy any Cybrid patrols you encounter.

Exceptionally complex weapon controls allow for diverse tactics in both targeting and salvaging



Arming up your mech is like tripping through a candy store full o' fiery death (left)



EXPLOSIVE

Metaltech: Earthsiege

Publisher: Sierra
Developer: Dynamix
Size: 1 CD-ROM
Release Date: Available now

With the release of *Metaltech: Earthsiege*, Dynamix vies to take the 'mech' simulation crown from Activision's ancient *Mechwarrior*. Set up in the future as a *Terminator*-style battle between a dying human race and the machines they've created, the game is presented with the same level of detail and accuracy as the company's historical simulations (*Aces of the Pacific*, *Aces over Europe*). Like these titles, *Metaltech* features instant play through individual mission

selections, or a career mode that pits the character against the cold onslaught of the Cybrids, mankind's deadly nemesis. More than just a shoot 'em up, the game forces players to carefully target their powerful weaponry (which includes missiles, various lasers, particle cannons and more) to cripple their opponents without blowing them up. Only by collecting salvage and new technology from the husks of their foes' bots can an outclassed human army stand against inevitable defeat. The game supports almost every device imaginable (including thrusterless flight and weapons control systems, rudder pedals, and more) along with cutting edge graphics and sound (digitized video clips detail each mission and debriefing). Without a doubt, the finest mech simulator available.

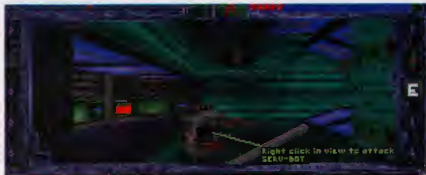
Rating: ★★★★★

Magic Carpet

Publisher: Electronic Arts
Developer: Bullfrog
Size: 1 CD-ROM
Release Date: Available now

The master world builders are at it again, this time they've created a rich 3D landscape for would-be conquerors to bend to their will. *Magic Carpet* is a groundbreaking title that combines the best features of a flight-sim — full flight control in a stunning texture-mapped environment — with the intellectual backbone of an RPG (over 16 different spells including massive volcanoes, brilliant lightning bolts, and several summoning spells, as well as full experience system). Along with network and modem play, Bullfrog included a full 3D mode (snazzy blue and red glasses included) and stereoscopic modes (those things your friends claim they can see but you can't). Sure to be loads of fun for fans of any genre.

Rating: ★★★★★



Handy digital instructions in *System Shock* help you through the first couple of rooms. If the indigenous bots give you trouble, introduce them to the pipe

System Shock

Developer: Origin
Publisher: Origin
Size: 28 MBs
Release Date: Available now

Along with *Descent* and *Dark Forces*, *System Shock* is the first installment in what will be the next generation of first-person scrolling games. As a newly awakened cyro-sleeper, you must restore order to an orbital base controlled by an out-of-control

computer. In order to beat the machine, you'll not only have to fight against twisted mutants and robots gone wrong with traditional weaponry like, for instance, the same lead pipes, lasers and dart guns that dad once used. You'll have to learn new methods of battle (terrestrial as well as flight) inside the main system's cyberspace interface. *System Shock* is a great blend of strategy and action backed up with all the extras.

Rating: ★★★★★

Wing Commander Armada

Publisher: Origin
Developer: Origin
Size: 12 MBs
Release Date: Available now

More of a supplement than a sequel, *Wing Commander Armada* adds a host of new elements to an all-too-familiar flight engine. Players can now choose from several new Confederation ships, or can opt to fly any of the (much cooler) Kilrathi craft. A campaign



In *Wing Commander Armada*, the new campaign mode gives you power of life/death over an entire fleet. Not always a good thing

rating sega cd

PC

FINALLY

Under a Killing Moon

Publisher: Access
Developer: Access
Size: 4 CD-ROMs
Release Date: Available now

Back for another try with its *Martian Memorandum* series, Access decided to pull out all the stops in the production of what was to be the most impressive interactive movie ever made. Unfortunately, in between the time it originally planned to release the game and the actual shipping date, the term "interactive movie" rapidly turned into a gamer's nightmare. Even so, *Under a Killing Moon* takes the infant genre to new highs in terms of acting (Margot Kidder does a great job with the gutsy barmaid schtick), graphics, and playability. Unlike *Myst* and *7th Guest*, *Under a Killing Moon* was created to give players total freedom of motion within the expansive digital world around them. Time passes normally (just like life, it's easy to be in the wrong place at the wrong time), other characters will react to your character depending on how you have previously treated them (hint: be nice), and objects have a tendency to stay put when you hide them in weird places. If you've already been burnt by other titles of this nebulous category of software, *Under a Killing Moon* will give you new hope, if you haven't tried an interactive movie yet, this is a perfect place to start.

Rating: ★★★★★



True to its graphic adventure side, the collecting of objects is probably the most important part of the storyline



Like every interactive movie, *Killing Moon* has its share of less than exciting moments (top). Conversation uses an interesting set of stances that can determine just how much info you're going to acquire from a person (above)

option allows would-be admirals to direct the movement and production of entire fleets in a *Star Control* strategy battle. But even with the new additions and the added excitement of a modern-link, there's not much here that separates the flying segments of the game from its predecessors. If you've been looking to play — with or against a friend — a title worth owning, wait for *Wind Commander 3*.
Rating: ★★

released — surprisingly well. And if you have played through them already, it may be a surprise that you don't remember them as well as you originally believed. *Zork Anthology* is an enchantingly nostalgic as well as a welcome return to the past.
Rating: ★★

SEGA CD

Zork Anthology

Publisher: Activision
Developer: Infocom
Size: 1 CD-ROM
Release Date: Available now

If it's been a while since you've played a text adventure, take a minute to check out this excellent compilation of some of the most challenging adventure games ever made. Although it will take most players a few minutes to get used to the complete lack of graphics, these titles, *Zork I, II, III, Beyond Zork*, and *Zork Zero*, have withstood the test of time — it's been 15 years since the original *Zork* was

ESPN National Hockey Night

Publisher: Sony Imagesoft
Developer: Sony Imagesoft
Size: 1 CD-ROM
Release date: Available now

There's both a CD-ROM and a cartridge version, and if one has the choice, the CD is vastly superior. The players handle better, and the ESPN highlight clips additions are great. The player animation is extremely smooth, and one can switch between a couple of different perspectives to watch the action, but compared to its direct competition, *NHL '95*, the control and pace are a little slow. *ESPN*



Without doubt the second best hockey game for Genesis, *ESPN National Hockey Night* still lags behind the classic *NHL '95*

NHL is good, very good, but it is not going to give EA's series anything to worry about, at least not for the moment.
Rating: ★★★

Mary Shelley's Frankenstein

Publisher: Sony Imagesoft
Developer: Pygmalion
Size: 1 CD-ROM
Release Date: Available now

Who'd have ever thought: *Frankenstein* retold as a combination RPG and fighting game? As *Frankenstein's* monster, the player limps through

seven stages, working through puzzles and taking time out for unlikely kickboxing matches with mutants, villagers, and Dr. Frankenstein himself. From a conceptual standpoint, this makes no sense at all (we doubt Mary Shelley was much of a *Street Fighter* fan). However,



A combination RPG and fighting game? *Frankenstein* is not all bad, but it takes some getting used to, and never really takes off

while the control is stilted, and the puzzles are a little obscure, it has a nice atmospheric look, and the rotoscoped animation is fine. It takes some work to get into, but if you stick with it, the game has its mild rewards.
Rating: ★★

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rating genesis

NBA Jam

Publisher: Acclaim
Developer: Iguana Software
Size: 1 CD-ROM
Release Date: Available now

Between this and *Mortal Kombat CD*, Acclaim's only other CD-ROM title, it seems that Acclaim thinks the CD format is only good for squeezing more money out of its best-selling licenses. It's not that this is a bad game, it's just that it's almost exactly the same



It's safe to say that if you liked Genesis's *NBA Jam*, you'll like the Sega CD version. New tech or old, they're pretty much the same

game one could buy on a cart for Genesis. It's been updated to include new stars from the '94-'95 season, there's a slight improvement in the sound quality, and there's a new crop of 'hidden' characters, but otherwise there's just no difference. It's good, but it could have been so much more.
Rating: ★★★

Panic

Publisher: Data East
Developer: Data East of Japan
Size: 1 CD-ROM
Release Date: Available now

Panic wants to defy description and critical analysis. The world's



Setting you adrift with little in the way of story, structure, or even instructions, *Panic* isn't so much a game as a Fischer Price toy for adults

machines have gone haywire, and each of the game's hundreds of screens has a different gadget with buttons to push. Through trial and error one must find the

right button to move to the next screen, and wrong buttons cause malfunctions that range from charming to disturbing. It's engrossing in a Zen sort of way, and kind of fun in small doses, but it's unclear whether the designers tried to be new and innovative, or just figured if they kept it vague, players would think the animation was cute and not notice there was no real game there. In a word, weird.
Rating: ★★

Popful Mail

Publisher: Working Designs
Developer: Falcom/Working Designs
Size: 1 CD-ROM
Release Date: Available now

Working Designs has released a couple of Sega CD RPGs, *Lunar* and *Vay*, that made up in being hilarious what they lacked in innovative design: This is the same thing as before, only funnier. *Popful Mail* makes three in a row. Originally produced in Japan by Falcom, creators of the *Ys* series, it's been revamped for US release, and it's a hoot. Like *Ys*, it has side-scrolling action to space out the RPG storyline, and it skews to a younger audience (although battles with gingerbread men have never been so splattery). If your sense of humor is off-kilter enough, it shouldn't matter how old you are.
Rating: ★★

Sega CD



Sure, some of that space is filled by the usual animated clips we've all come to associate with CD-ROM, but there's also new characters, new backgrounds, new moves, and tons of other hidden stuff — you're getting your money's worth



There's a lot of space on a CD, and the designers of *Eternal Champions* have done their very best to try and fill it up



GENESIS

Animaniacs

Publisher: Konami
Developer: Konami
Size: 8 Mbits
Release Date: Available now

With the varied skills of Yakko, Wakko and Dot, the player runs and jumps through six levels collecting pop memorabilia. Yakko's muscle pulls and pushes crates, Wakko's hammer lights



The cartoon feel comes through here in *Animaniacs* as Dot uses her feminine allure to leave this pooch panting like a dog

VIOLENT

Eternal Champions:
Challenge from the Dark Side

Publisher: Sega
Developer: Sega
Size: 1 CD-ROM
Release Date: Available now

It's about time somebody figured out what CD-ROM was good for: not video, not sound, but storage! *Eternal Champions* for Genesis is a cut-above-average fighting title, hampered mostly by an over-reliance on 'charge' moves, which slows the pace, and an approach calculated for maximum commercial appeal, rather than solid gameplay. But the CD version improves the fighting system and picks up the pace, then pulls out all the stops and throws in every kind of extra: four new player-controlled characters, nine hidden characters, and a new super boss — the Dark Champion — for a total of 24 fighters. Sega also added seven new backgrounds, a number of hidden backgrounds, and four new classes of finishing moves, each of which is bloodier than the last (a tactic clearly geared to stoke controversy and improve sales), plus animated clips to introduce each fighter. In other words, they take a good game, and use the inexpensive storage capacity of CD to add surprises until they build something people will be digging stuff out for years. Very cool.
Rating: ★★★★★

rating genesis

Sega Genesis

Destroying the enemies and then welding this tanker up is one example of many ingenious missions (left)



The sub Sea Quest, in the heart of some serious battle, is intense (above); Going into the bay to choose the right sub makes this more than an action game (right)



DEEP

Sea Quest

Publisher: T.H.Q.
Developer: Sculptured Software
Size: 16 Mbits
Release Date: Available now

In Sea Quest, the player, who is fully equipped to handle any situation that may arise, mans the bridge of a revolutionary submarine. Just cruising the Sea Quest around the cities battling pirate ships and destroying enemy bases is a solid game in itself. But throw in 13 missions, 4 hidden cities, and 14 mining sites where you dock the Sea Quest and use one (or all) of the 6 mini-subs inside the Sea Quest's bay — now that's a game. Each mini-sub (The Crab, The Stinger, The HR Probe, The Truck, The Speeder, and Darwin the dolphin) looks and handles different, and is used in a different manner. It is your job as commander of Sea Quest to decide which to use and when (a decision that isn't always easy).

With ingenious missions like disarming a faulty security system, salvaging radioactive material from a downed plane, or rescuing a trapped crew from a cavern before it explodes, Sea Quest never lets you catch your breath. Each mission requires strategy, skill, and of course, lots of underwater destruction. The graphics can't compare with the much prettier SNES version, but the well-orchestrated soundtrack of the TV show is an aural pleasure.

If you have both systems, the SNES version is far superior. But Genesis owners won't be disappointed (unless they play the SNES first like we did).

Rating: ★★

cannons and smashes rocks or noggins, and Dot is the beauty who blows kisses to woo her unsuspecting foes. Combined, they are the Animaniacs and you'll need to use all their zany skills to move through the surprisingly tough levels.

Cutting edge innovation isn't here, but what is here is plenty of fun.

Rating: ★★

Beavis & Butt-head

Publisher: Viacom
Developer: Viacom
Size: 16 Mbits
Release Date: Available now

Use your juvenile chides and disgusting habits as America's most popular slackers to find



The title screen is the only fun in this game. By pressing buttons you can make B & B exchange their signature chuckles

your way to a Gwar concert. Trips to Turbo Mall 2000 and Highland High have their brief moments of humor, but if you're looking for Beavis and Butt-head humor, just watch the show. This game is simply rotten. Even the biggest fans of the show won't enjoy the abysmal control, weak gameplay, and repetitive levels.

Beavis and Butt-head is a game that shows while moronic humor and plenty of flatulence may make great TV, it stinks as a game. (All puns are intended and, we're sad to say, the sole property of Next Generation.)

Rating: ★

Death And Return Of Superman

Publisher: Sunsoft
Developer: Blizzard
Size: 16 Mbits
Release Date: Available now

The SNES version has been out since summer and now the Genesis version is here. Hopefully, you weren't anxiously awaiting the Genesis version, because it contains the same stale gameplay of the SNES. Run from right to left for 10 levels of the same backgrounds and enemies. You do get to be five different supermen (The Eradicator, Superboy, The Cyborg, Steel, and Superman himself) as the game progresses, but it's still the same boring action. Comic book fanatics will enjoy the cinema screens that retell the Death of Superman saga, but to nonfanatics it won't make much sense at all.

If you must catch a glimpse of your favorite superhero, buy the comic book, not the game.

Rating: ★★

Ecco: Tides of Time

Published: Sega
Developer: Sega
Size: 16 Mbits
Release Date: Available now

Everyone's favorite dolphin swims back to the Genesis with 40 plus levels of aquatic adventure.

The graphics and sound in Ecco: Tides of Time surpass its predecessor by leaps and bounds, and Ecco's underwater world has grown in size and challenge. The problem with Tides is the same as with the first Ecco game, not enough action and solid gameplay to keep the interest of most gamers.

Taxing puzzles, RPG elements, shooting stages, and some of the best Genesis graphics to date make you want to reel Ecco II in, but it's certainly not a keeper.

Rating: ★★



Ecco: Tides of Time features beautiful underwater graphics that grab the eye, but repetitive levels with little action make you grab for another cart

The Great Circus Mystery

Publisher: Capcom
Developer: Capcom
Size: 12 Mbits
Release Date: Available now

The mystery here is how Capcom can churn out quality games like *SSFII*, *Demon's Crest*, and *Mega Man*, then turn around and produce the amazingly uninspired *Great Circus Mystery*.

As Mickey or Minnie (first videogame role for the skirted mouse) you're out to save the circus. Six levels later, the circus is saved and the mild fun is over. As Mickey jumps from level to level, he is able to suit up in different costumes, like a cowboy outfit which allows him to shoot his enemies with a cork gun, for instance. Mickey's different suits and Minnie's adorable face are just enough to get you interested, then the game is over.

Compared to Sony Imagesoft's *Mickey Mania*, The *Great Circus Mystery* is just a great big disappointment.

Rating: ★★

NFL '95

Publisher: Sega
Developer: Double Diamond
Sports
Size: 16 Mbits
Release Date: Available now

Sega took Joe Montana's *NFL '94*, one of the best football titles this year, dropped Montana's name and threw the whole engine out the window. The ambitious result is the best football sim to date.

NFL '95 uses a tilting field to bring the action close when running or catching a pass and enables you to see the whole field when trying to spot an open receiver.

This feature alone makes *NFL '95* a technical winner that will only lead to better football games. All 28 teams include updated rosters, accurate ratings, real names, season play, stats kept for every player, league leaders, injuries, and finally, the most realistic football action out there, ingredients for a purist's dream.

EA's *John Madden Football* still plays faster and harder, but the realism of *NFL '95* makes the slightly slower gameplay



In *NFL '95*, the players are terribly small, but you still feel like this thanks to S/FX and animation

tolerable and leaves *NFL '95* a football fan must.

Rating: ★★

Red Zone

Publisher: Time Warner
Developer: Zyrrin
Size: 16 Mbits
Release Date: Available now

Urban Strike on steroids is the best way to describe this extremely challenging game.

Red Zone seats you in an Apache attack helicopter and sends you whirling through 10 intense missions which combine air battle and 'deplaning' the chopper for surface gun-to-gun combat. The helicopter graphics and action don't compare with



Large out-of-chopper graphics and bloody battles give *Red Zone* something other chopper games don't have

that of EA's similar *Urban Strike*, but the fantastic surface sequences, incredibly large graphics and gory battles blow EA's flagship away.

While *Red Zone*'s plot and gameplay are surely blatant rip-offs from *Urban Strike*, the enormous challenges and fundamentally sound combat gameplaying make this title a viable alternative to the ongoing success of the *Strike* series.

Rating: ★★

Syndicate

Publisher: Electronic Arts
Developer: Bullfrog
Size: 16 Mbits
Release Date: Available now

Last year *Syndicate* made some noise on the PC as one of the more intriguing titles. Now Bullfrog (strategy-minded Developers of *Powermonger* and *Populous*) brings the gumshoe action to the Genesis.

The premise of *Syndicate* is to equip and guide small strike teams through various urban landscapes to complete missions; the missions range from eliminating a city's population to brainwashing enemy operatives. There are 50 plus levels of strategy-packed action which make for great gameplay, but too often the action just isn't there. Graphics aren't the standard to judge a strategy game like *Syndicate*, but the small characters and limited colors make this game just plain ugly.

Often the intense strategy games of the PC domain never make much of a 16bit game and *Syndicate* is a prime example.

Rating: ★★

SNES

Biker Mice from Mars

Publisher: Konami USA
Developer: Konami of Japan
Size: 8 Mbits
Release Date: Available now

At first glance, this game doesn't look very impressive with just 8 Mbits and a little-known license. But the folks at Konami threw out most everything that had to do with the *Biker Mice* and simply used their likenesses in a great racing game which can best be described as a cross between *Mario Kart* and *Rock 'N' Roll*



Biker Mice from Mars proves you don't need a top licensee or a big MB count to make a good game

Racing. And as good as the one-player mode is, the two-player mode is even better. The only

drawback is that the split-screen view blocks out much of the track, making it tough to navigate. But overall, it's inexpensive, different and fun.
Rating: ★★

Demon's Crest

Publisher: Capcom USA
Developer: Capcom of Japan
Size: 16 Mbits
Release Date: Available now

The latest in the *Gargoyle's Quest* series from Game Boy and NES fame, this first Super NES version once again stars Firebrand, the demon who got his start as a bad guy in Capcom's *Ghosts 'N' Goblins* series. The action in *Demon's Crest* is much the same as it was in the earlier games, with lots more hidden rooms, items and weapons to find. The new map mode is also a nice touch, giving you a 'demon's-eye' view of the countryside. Unfortunately, the game is way too short. You don't even need most of the hidden stuff to beat it.

Rating: ★★

Super Bomberman 2

Publisher: Hudson Soft
Developer: Hudson Soft
Size: 8 Mbits
Release Date: Available now

The first SNES *Bomberman* managed to gather a decent following, mostly due to word of mouth. The second game doesn't play much different from the first, with slight enhancements to the one-player mode and a few new



There is no better multi-player game than *Super Bomberman 2*

stages in the Battle mode. The basic *Bomberman* structure has changed very little. As a one-player game, *SBM 2* is OK, but it's an absolutely incredible multiplayer game. The more players that join in, the more fun the action becomes as up to five bombermen run around trying to blow each other away. This is truly God's perfect party game.
Rating: ★★★★★

rating nes

SNES



Some new wire-frame 3D effects are used, but only briefly

There is a slightly more involved storyline this time, with cinematics and in-game dialogue



The game looks great, but put it beside a picture from the first MMX and see if you can tell which is which

AUTOMATIC

Mega Man X²

Publisher: Capcom USA
Developer: Capcom of Japan
Size: 24 Mbits
Release Date: February

A year ago Capcom premiered *Mega Man's* first 16bit adventure, *Mega Man X* for the Super NES, which was set even further in the future with new villains and a new robot hero. Now the aptly-titled *Mega Man X²* continues the new *Mega Man* adventures. Just like in every other *Mega Man* game ever made, the graphics, sound and play control are all superb. But again — it's just like every other *Mega Man* game ever made. This is one series in need of a serious overhaul. And despite it all, the little blue guy is just as unbearably fun as he always was.

Rating: ★★★★★

Super Punch-Out!!

Publisher: Nintendo of America
Developer: Nintendo of Japan
Size: 16 Mbits
Release Date: Available now

Although the graphics are closer to the original coin-op, Nintendo's latest sequel owes much more to 1987's *Mike Tyson's Punch Out!!* for the NES. Both games are famous for wildly outrageous boxing — a good thing considering that the real sport makes for hideously boring videogame fare. New features include more special punches and the ability to save records. On the bad side, the graphics look flat and the opponents' animation is extremely choppy — but then again, more frames could throw off the game's crucial timing. Most everything else is done to perfection, making *Super Punch-Out!!* a great tribute to the original classic.

Rating: ★★★★★

WildSnake

Publisher: Bullet-Proof Software
Developer: Manley & Associates
Size: 8 Mbits
Release Date: Available now

The latest puzzler from *Tetris* creator Alexey Pajitnov, *WildSnake* is basically the same game, only with snakes instead of blocks. There are other small additions, like different screen shapes, but the beauty of *Tetris* was its simplicity. Just as *WildSnake* adds more to the mix, it spoils the recipe. Also, much of the game is just guesswork. You can guide a snake to a certain area, but it's impossible to know for sure where it'll stop. However, *WildSnake* still manages to entertain, if only as a watered-down version of the game that it so desperately strives to beat.

Rating: ★★★

Wolverine: Admantium Rage

Publisher: LJN/Acclaim
Developer: Bits Corporation
Size: 16 Mbits
Release Date: Available now

First, the few things that this cart does right. The character animation is good. There is a decent number of attacks. And recurring characters from the *Wolverine* comic make their video game debut. But for all its flash,



Apparently the person who wrote the instructions knows much more about *Wolverine* than the game developers

all it takes is one play to realize that *Admantium Rage* really isn't a *Wolverine* game at all. How many comic plots revolved around him running and jumping from platform to platform in typical, bland videogame mazes? You could get just as much 'Admantium Rage' from an old copy of *Impossible Mission*. If you're a *Wolverine* fan, go for Capcom's SNES *X-Men*.

Rating: ★★

WWF Raw

Developer: Sculptured Software
Publisher: LJN/Acclaim
Size: 24 Mbits
Release Date: Available now

Acclaim has been repackaging the same *WWF* game for years. Occasionally a new feature or two



Acclaim's standard *WWF* upgrade, complete with ridiculous 'Mega Moves.' While this is still a good game, it is not worth the full price of a new cart

SNES

SKIN DEEP

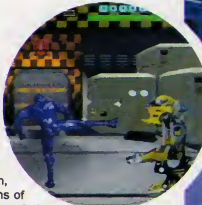
Rise of the Robots

Publisher: Acclaim
Developer: Mirage Technologies
Size: 32 Mbits
Release Date: Available now

For almost a year, gamers have dreamed about pictures of rendered robots and promises of hyper-realistic gameplay. Unfortunately, reality is somewhat less flattering. The gameplay in *Robots* is slow, unoriginal and uneventful. Robots also has fewer characters and special moves than any other fighting game. The game's saving grace is the hi-tech rendered graphics, right? Again, a disappointment. Gone are the millions of colors used to generate the early photos that sent the industry buzzing. The game doesn't even take full potential of the Super NES color palette. In the end, *Robots* is just another forgettable 'me-too' brawler.

Rating: ★★

Maybe other versions will fare better. The PC version at least looks good, but the Genesis one...



While the game-playing consumer world is still almost a year away from the '95 super-systems, rendered graphics are already wearing thin

Even the intro screens, traditionally a playground for games with computer-generated graphics, look stale.



is added, and the characters are always updated to match the current state of the WWF. This time new attacks, called 'Mega Moves,' have been added. These are ridiculous moves that are totally unrealistic, even for this 'sport.' While many players will enjoy these crazy new attacks, it can also be argued that they are a step in the wrong direction. There are still many aspects of pro wrestling that none of the WWF games have yet to cover, so why not go after those?

Rating: ★★★

progresses. The lifelike graphics are created by overlapping live-footage shoots using digitized images of actors doing criminal things, mostly shooting at you. While it's definitely not the next level of arcade entertainment, *Cops* has enough going to make it worth a few extra games at its steeply-priced play.

Rating: ★★★

Dark Stalkers

Publisher: Capcom
Developer: Capcom
Size: Two-player standard
Release Date: Available now

Although there's no hiding the fact that *Dark Stalkers* is a *Street Fighter II* clone to the core, Capcom's newest fighting standup has a unique flavor



Felicia vs. Jon is the classic battle of cat and dog in *Dark Stalkers*. Our money's on the young lady

making it well worth playing. Players choose from one of 10 different monsters (including a beautiful succubus, a vampire, and a Frankenstein-style construct) who fight it out in traditional best-of-three tournaments.

The graphics and animation are definitely silky smooth depicting the fastest of special moves without experiencing jumped or skipped frames.

Superbly rounded out by a spooky soundtrack and plenty of high-impact background images, *Dark Stalkers* is a good, strong twist on old technology.

Rating: ★★★



Since you have no peripheral vision in *T-Mek*, it's important to keep track of as many opponents as humanly possible

own ratings in speed, shield strength, firepower, and special weaponry. Six different arenas—including very dangerous arctic and inferno levels—feature recharge drones and computer enemies that create an excellent competitive atmosphere and enable creative uses of the more subtle special weapons (cloaking shields that allow for sneak attacks and guided missiles that you fly from your cockpit are particularly fun examples). Easy to learn controls are complex enough to provide enough subtlety to give advanced players an edge. With new graphics and special effects, *T-Mek* is an old game given new life.

Rating: ★★★

T-Mek

Publisher: Atari
Developer: Atari
Size: Two-player standard
Release Date: Available now

T-Mek is a solid, tank-based shoot 'em up with a frightening similarity to Namco's *Cyberseid*. Players choose from six different classes of T-Meks each with its

ARCADE

Cops

Publisher: Atari
Developer: Nova Productions Ltd.
Size: One-player sitdown
Release Date: Available now

A strange new rider on the *Lethal Enforcers* bandwagon, *Cops* uses real-life footage shot on location in Los Angeles creating a surprisingly realistic drive-and-shoot police simulation. Players have access to a handgun and a feedback steering wheel (à la *Outrun*) and evolve through training, shoot-outs and high speed car chases as the game



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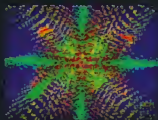


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Correspondence, Communication, Mail, Post and — yes — Letters.

With **NEXT Generation** no. 1 barely on sale as issue no. 2 goes to press, another enamored mail bag effectively blasts this issue's chances of a bulging "letters" page. Here are some of the letters that made it in on time...

In reading your first issue I was most intrigued by the article "The Violence Tapes." Tom Zito of Digital Pictures is very accurate in his psychological perspective on how violence affects children who play videogames. I agree in full that if children are reared in a stable environment, playing videogames won't have a negative effect on them (i.e. turning them into violent creatures overnight), as opposed to someone who grows up in an unstable environment who may be more likely to find a reason to excuse his or her unhappiness. And as for Senator Leiberman. He doesn't seem to remember what all 'important' senators seem to have forgotten — they, too, were kids once a time long ago.

I did all sorts of experimental things when I was a kid and I'm now 30 years old, am married, still play videogames, and the very last time I was in a fistfight was in the sixth grade. I'm no more violent than a mouse. And frankly, I'm more worried about my kids finding out about civil wars in Africa or unrest in Haiti than having them 'fight' in a videogame.

To people like Senator Leiberman,



Harvester has garnered mixed responses due to violent scenes

I must quote a wise man from Id Software, Jay Wilbur, who once spoke the fine phrase "Get a life!"

**Charles Pfeiffer
Fremont, CA**

The whole violence issue is very, very complicated and last month's "The Violence Tapes" only dealt with one side of the argument. There are many factors involved: freedom of speech, a consumer's right to purchase what he/she wants, the influence of exposure to violence on impressionable minds, parents' rights to know and control what their children are playing — to mention just a few. As to whether watching fictional violence leads to more violence in real life, no one knows for sure. In the absence of any genuine legislation or psychological proof to curb the development of violent games, however, these games will continue to be developed — and "The Violence Tapes" gives a good indication of what direction the genre is really heading.

What the heck is going on with Atari! The company produces a respectable (it's really not bad) games machine, and then it completely fails to follow up with any significant support for it. It seems to me that the Jaguar is in real danger of missing its biggest window of opportunity. While able to rent a Genesis my friend can't even rent a Jaguar unit at Videotex Game Club (a game and system rental outfit) because the owner doesn't believe anyone would want to rent it.

At least 3DO realizes that every second counts (adding a \$3 royalty fee to developers' costs) while it still has the market largely to itself. But Atari — who really should have been heavily pushing Jaguar more than a year ago — acts as if it has all the time in the world. What's the deal?

**Terry Gillham
Berkely, CA**

Atari's problems have always centered around a lack of cash. Although Atari is a powerful company, it really isn't in the same league as Sega or Nintendo and this effects its ability to compete on an equal footing with marketing. TV ads don't come cheap, and money also talks when it comes to in-store promotions and extensive distribution. So the reason Jaguar had "all the visibility of a stealth bomber" (as Seby Bateman commented in last month's "Movers 'n' Shakers") up until Christmas '94 is understandable.

Atari's financial status doesn't, however, explain its lack of quality software. With only *Alien Vs. Predator* truly showcasing the machine's power, Atari rapidly needs to extend its game line-up and that (as "Revival of It Fittes" on page 46, touches on) should not be dependent on cash.

Although I have my own doubts about the 32X, I completely disagree with the news story/editorial "32X takes Genesis one step forward." Sega is a



massive company with nearly unlimited resources and can certainly maintain support on all four platforms ("even forgetting Game Gear"). The fact is that people will want to keep their old machines as updated as possible and with the 32X you're given the chance to keep the machine alive before the upcoming platform wars. To compare Genesis's upgrading capability with the computer industry leads me to think that at least Sega has not outmoded its own machine, unlike some Macintosh units I know of...

Another point is that, despite your informative article "Players," I

still have no clue as to which console is the best one to buy and because I am a conservative buyer, I'm going to invest \$159 — a drop in the bucket — upgrade my Genesis and play cool games while everyone else waits around for new consoles that may not ever arrive.

**Berry Pulleyblank,
Walnut Creek, CA**

"Players" was not designed to be a buyers' guide — most of the machines talked about haven't been released yet! "Players" was an update of how all the next generation games machines are shaping up. As for 32X, **NEXT Generation** wishes you the best of luck with your new machine. Last month's editorial was not a slighting of 32X as a product (although we have yet to see any truly impressive software for it), but rather more a questioning of Sega's sense in spreading resources too thinly at a crucial stage in its history.

Maybe Sega can continue creating first-rate, dedicated games for Genesis, Sega CD, 32X and 32X CD, but it's doubtful. And there's no way that all game players can afford to buy and support all four system configurations, which means that one machine's sales sacrifices another — which in turn means that sales never reach maximum and it's in a more fragile long-term position.

Of course, Sega has the launch of Saturn to deal with. And that's a whole new story...



Want to get something off your chest in ten words or less? Want to send an anonymous message of respect/abuse to the programmers of your last software purchase? Mail shot the interactive entertainment industry! Post it here; usual address.

dispatches

Letters from desks on the front line



In the first of an occasional series of reports from players on the cutting edge of game development,

Shiny Entertainment's David Perry, wonders just where the game developers of tomorrow will come from...

Yippee, the late nights are over, the pizza boxes are gone, *Earthworm Jim* is finally finished. Sega is happy, Nintendo is happy, the cartridges are manufactured, Jim's are all over the country sitting on the shelves. Already, after doing promised several 'Game of the Year' awards, the team of nine guys unanimously agrees to start work immediately on the sequel *Earthworm Jim II*.

Meanwhile, the magazine-billboard-television advertisements begin. Selling a game these days is really a big deal...As the PR campaign reaches a crescendo, I am asked to go to high schools all over the country and talk to kids about our industry. (Mission: Answer questions about the industry and relentlessly plug *EJ*, all the way!) Surely that would bore the kids, or so I thought...

I felt like a drug dealer walking through the high schools with a Sega Genesis under my arm, teachers hanging out doors to see what was going on. I was hurried into classrooms, to my surprise, when I finally met with the kids (in group sizes of about 10-70), who were turning up with portfolios in their hands. Designs, ideas, sheets of paper with lists of questions and strange doodles on them. They knew all about the games but knew nothing about who makes them or how they are actually made. They also knew nothing about what the rest of the world likes to play.

To my even bigger surprise a lot of young girls turned up! Now hold on a moment. I thought videogames were a men-only affair. I asked, "Why have so many girls turned up?"

First Girl, "We love videogames!"

Second, "But we hate stupid games like Barbie!"

Me, "Hold on, I thought that you

didn't like games or something..."

Third Girl, "No, we love them, we don't like to play in front of boys."

Fourth Girl, "My brother hogs the machine, I hardly ever get a go."

First Girl, "My brothers hurry me along, and I really hate that!"

Did that open my eyes! These girls were genuinely interested in playing and making games. (Hah, this was going to help my speech nicely!)

But no one's helping or encouraging these kids to capitalize on their interest and turn a hobby into a career!

In the UK there are really excellent television programs dedicated to videogames with names like "Bad Influence", "GamesMaster", "Games World", and "Movies, Games & Videos". This gives British kids a look at the latest games and a chance to see behind the scenes and how it happens. The UK has four channels and four dedicated gaming programs. The US has zillions of channels and no gaming programs. What's the deal? I can learn karate or how to spray my head black but nothing on games or toys!

The videogames that were successful over in Europe like the Commodore Amiga or Atari ST had keyboards and mice instead of just a joystick. The artists-to-be grabbed the mice and the programmers-to-be dove into the keyboard. This gave them that elusive chance to really give it a go to experiment and try new ideas. When you start you tend to create rubbish and be convinced that you are a star, however, if you stick to it, or have nothing better to do, you will learn the tricks of the trade. This fact alone has generated numerous talented European developers that US companies are mopping up with money sponges at this very moment.

Believe me, the US Immigration Services is fed up with the 'busloads' of developers having to travel to Mexico and back every three months or so just to stay legal (wearing fake mustaches and sombreros, only joking). What they really need is a steady supply of fresh US talent with new ideas and concepts to take games to the next level (that is the real future of interactive

entertainment, eh-hem, sorry to steal your phrase).

Videogame magazines clearly are the only source of information to guide these programmers/artists of the future along the correct path. Luckily, here in the US this magazine, **NEXT Generation**, is

going to help fill the gap, supplying in-depth information and interviews, asking questions to find what buyers really want and what they are really going to get anyway.

But it's still not enough. I started my career in Ireland when I was 17 years old. My teachers thought that I was totally crazy and the tiny games industry was absurd. I took the gamble and became a self-taught programmer. Ten years later you would expect it to be easy to do this again. No way!

As I traveled around the country, I asked the following question to each class and to teachers...

How much money do all videogames combined make in a year? The answers...

One kid, "Ten thousand bucks." Another kid, "No, its more than that, it's at least a million bucks!"

They are so far out, it's billions of dollars. I believe it stands at around nine billion dollars if you include worldwide sales and arcade revenue. This compared to the seven billion dollar movie industry makes teachers' eyes bulge and kids' jaws drop. (They asked me to take more classes!)

In the whole world, there is one class in one college dedicated to videogame design and one class dedicated to SNES programming. The rest of this drought is people like myself being bombarded with questions like "How do you become a professional games programmer?"

As a start, my company Shiny Entertainment has been involved in the creation of a book (on a non-profit basis, so this is not a plug). It is called *Behind the Scenes at Sega—The Making of a Video Game* by Prima Publishing. It documents the creation of some of the best selling games on the Sega Genesis. The sections we have been involved in closely cover Disney's *Aladdin* and *Earthworm Jim*. The book was out for the holiday season and answers many questions including those from other companies wondering how we achieved the

super smooth animation in *Aladdin* and *Earthworm Jim*.

So, if you want to make games yourself, read this book. Meanwhile, here's a list of development jobs, just to get you started...

Animator — Draws everything that moves.

Artist — Draws everything that does not move.



David Perry's *Earthworm Jim* takes on the might of *Donkey Kong Country* for king of the videogame heap in early 1995

Musician — Makes all music and all sound effects.

Designer — Lays out the game and determines its level of difficulty.

Design — Usually the whole group does this.

Programmer — Takes everybody else's bits and pieces and puts them together in the machine.

Producer — This person keeps everyone in sync and is the team's link to the outside world.

Tester — Exactly that, plays the same game over and over and over.

PR — Gets magazines and newspapers to write about the game.

Marketing — This lucky person handles all advertising.

Financial — An accountant.

Counsel — An attorney.

Licensing — Somebody who sells the use of your character(s) and logos to other companies.

Video Guy — Makes the videos and digital video to put into games.

Cleaning Lady — This is the person who usually comes up with the best game ideas.

This is a real basic list, there are dozens of jobs available (press, etc.) So, kids never take it for an answer. And if you have any more questions, write to Neil West, Editor at **NEXT Generation**. (He's joking — Ed).

David Perry signing off, time for me to get back to *Earthworm Jim II*. (Oh, just to keep the PR people off my back, Buy *Earthworm Jim*, Rent *Donkey Kong Country*, Jim will take longer to finish than *Donkey Kong Country* which is for younger players.)

David Perry

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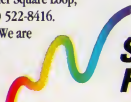
How about being part of the *Top Gun* development team for the next generation of game consoles: Sony PSX, Saturn? Sharp **SOFTWARE ENGINEERS** with 2+ years' programming experience in "C", along with a strong math background and graphics experience preferred. Do you have what it takes?

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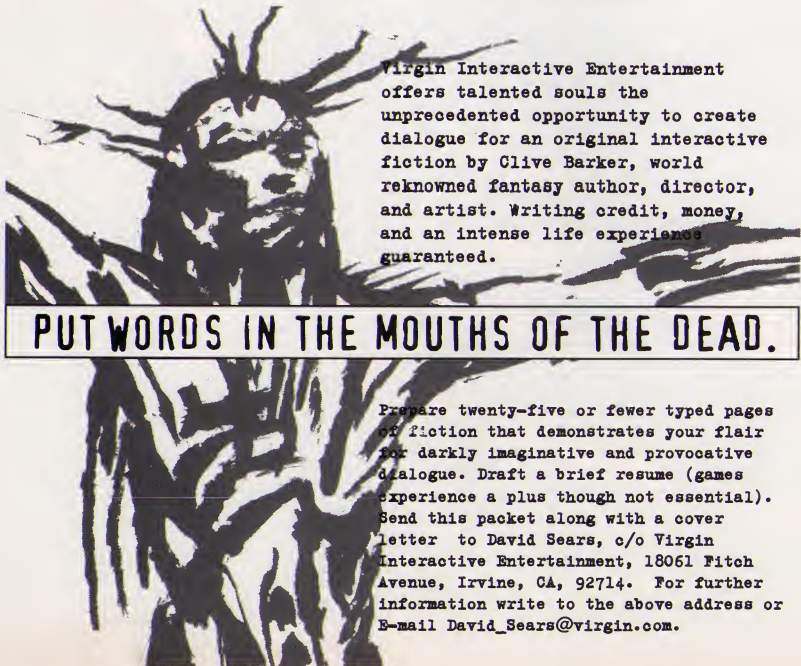
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Next Month

PlayStation Sega Saturn PlayStation Sega Saturn

NEXT Generation has been tracing the progress of both the Sony PlayStation and the Sega Saturn for much of the last year.

Both systems have recently hit the Japanese high street. We'll report back from Tokyo on these historic events, and finally get to grips with the finished hardware.

Also, NEXT Generation joins the Japanese press at the Shoshinkai festival in Tokyo, where Nintendo will be revealing its long-awaited Virtual Boy VR system as well as showcasing graphic demos of its first software for the Ultra 64.

NEXT
GENERATION
issue three

On sale Tuesday, February 21.



OK class, the answer is:

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could play both in **Mixed Match**. Like you could play Tetris while he plays Dr. Mario. Or you could play Dr. Mario while he plays Tetris. Or he could play Dr. Mario while you yell **"SHUT UP"** since



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this is getting really annoying. Anyway, to sum it up: there are six new ways to play

your two favorites—that's more than you can count on one hand (unless you grew up next to a nuclear power plant).



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